TOSHIBA

FILE NO. 020-200021

SERVICE MANUAL

COLOR TELEVISION

N0S Chassis

32AX60, 36AX60

(TAC0023) (TAC0024)

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CHAPTER 1 GENERAL ADJUSTMENTS

SAFETY INSTRUCTIONS

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” INSTRUCTIONS BELOW.

X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is (A) kV at zero beam current (minimum brightness) under a 120V AC power source. The high voltage must not, under any circumstances, exceed (B) kV.

   Refer to table-1 for high voltage (A), (B).
   (See SETTING & ADJUSTING DATA on page 17)

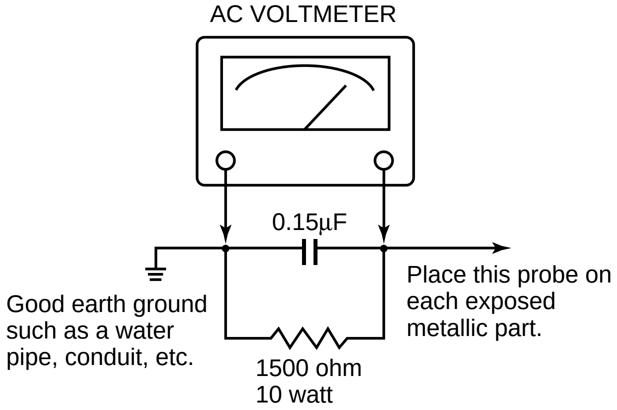
   Each time a receiver requires servicing, the high voltage should be checked following the HIGH VOLTAGE CHECK procedure in this manual. It is recommended that the reading of the high voltage be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter.
2. This receiver is equipped with a Fail Safe (FS) circuit which prevents the receiver from producing an excessively high voltage even if the B+ voltage increases abnormally. Each time the receiver is serviced, the FS circuit must be checked to determine that the circuit is properly functioning, following the FS CIRCUIT CHECK procedure in this manual.
3. The only source of X-RAY RADIATION in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.
4. Some part in this receiver have special safety-related characteristics for X-RAY RADIATION protection. For continued safety, parts replacement should be undertaken only after referring to the PRODUCT SAFETY NOTICE below.

SAFETY PRECAUTION

WARNING : Service should not be attempted by anyone unfamiliar with the necessary precautions on this receiver. The following are the necessary precautions to be observed before servicing this chassis.

1. An isolation Transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Always discharge the picture tube anode to the CRT conductive coating before handling the picture tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled. Use shatter proof goggles and keep picture tube away from the unprotected body while handling.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as; non-metallic control knobs, insulating covers, shields, isolation resistor-capacitor network etc.
4. Before returning the set to the customer, always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as antennas, terminals, screwheads, metal overlays, control shafts etc. to be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 120V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner:

   Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 µF, AC type capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time. Measure the AC voltage across the combination of 1500 ohm resistor and 0.15 µF capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part. Voltage measured must not exceed 0.3 volts rms. This corresponds to 0.2 milliamp. AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.


AC VOLTMETER
0.15µF
Good earth ground such as a water pipe, conduit, etc.
Place this probe on each exposed metallic part.
1500 ohm 10 watt

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-ray radiation or other hazards.

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” ON PAGE 3 OF THIS MANUAL.

SET-UP ADJUSTMENT (FOR 13”, 14”, 19”, 20”)

■ The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows :

1. Color Purity
2. Convergence
3. White Balance

Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning. Refer to figure 1.
Mounting position of the purity magnet assembly should fit to same position as old one because slightly difference to the position depen on a kind of tube.

* There are no adjustment of purity and convergence in some picture tube (Unified with purity magnet)

COLOR PURITY ADJUSTMENT

NOTE : Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

1. Demagnetize the picture tube and cabinet using a degaussing coil.
2. Set the brightness and contrast to maximum.
3. Use a green raster from among the built-in test signals.
4. Loosen the clamp screw holding the yoke and slide the yoke backward or forward to provide vertical green belt (zone) in the picture screen.
5. Remove the Rubber Wedges.
6. Rotate and spread the tabs of the purity magnet (See figure 2.) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, enter the raster vertically.
7. Slowly move the yoke forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check the purity of the red and blue raster.

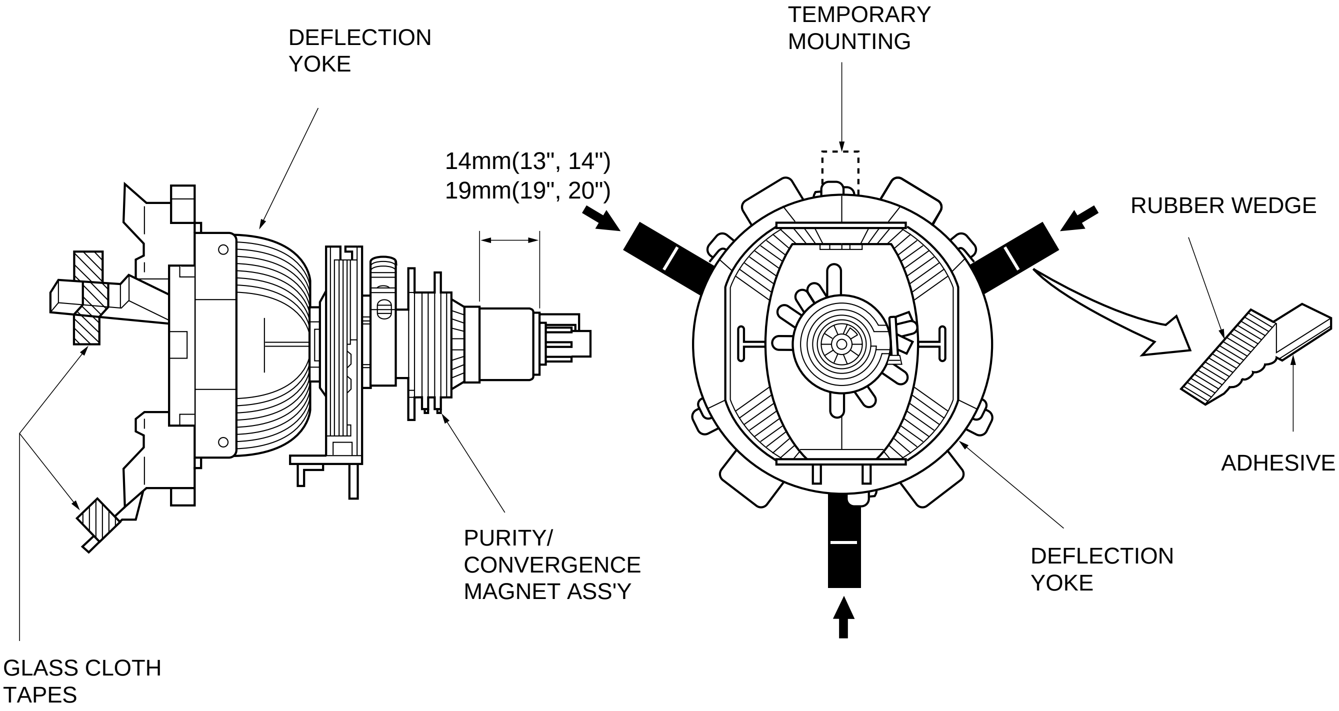


Figure 1.

CONVERGENCE ADJUSTMENTS

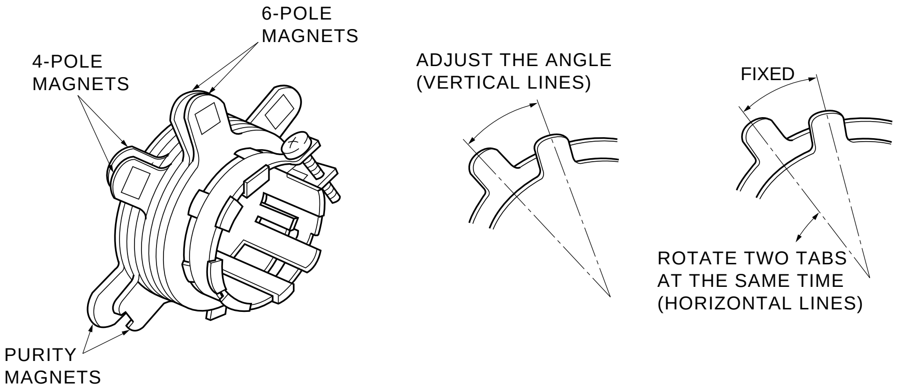
NOTE: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ CENTER CONVERGENCE ADJUSTMENT

1. Use the cross-dot pattern from among the built-in test signals.
2. Set the brightness and contrast for well defined pattern.
3. Adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 2.) and superimpose red and blue vertical lines in the center area of the picture screen.
4. Turn the both tabs at the same time keeping the angle constant to superimpose red and blue horizontal lines at the center of the screen.
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line and green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole Magnets have mutual interaction and make dot movement complex.

■ CIRCUMFERENCE CONVERGENCE ADJUSTMENT

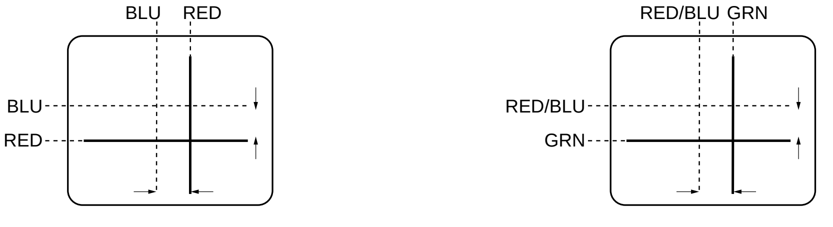
1. Loosen the clamping screw of deflection yoke slightly to allow the yoke to tilt.
2. Temporarily put a wedge as shown in figure 1. (Do not remove cover paper on adhesive part of the wedge.)
3. Tilt front of the deflection yoke up or down to obtain better convergence in circumference. (See figure 3.) Push the mounted wedge into the space between picture tube and the yoke to fix the yoke temporarily.
4. Put other wedge into bottom space and remove the cover paper to stick.
5. Tilt front of the yoke right or left to obtain better convergence in circumference. (See figure 3.)
6. Keep the yoke position and put another wedge in either upper space. Remove cover paper and stick the wedge on picture tube to fix the yoke.
7. Detach the temporarily mounted wedge and put it in another upper space. Stick it on picture tube to fix the yoke.
8. After fixing three wedges, recheck overall convergence. Tighten the screw firmly to fix the yoke and check the yoke is firm.
9. Stick three adhesive tapes on wedges as shown in figure 1.


6-POLE MAGNETS
4-POLE MAGNETS
PURITY MAGNETS
ADJUST THE ANGLE (VERTICAL LINES)
FIXED
ROTATE TWO TABS AT THE SAME TIME (HORIZONTAL LINES)

CONVERGENCE MAGNET ASSEMBLY

ADJUSTMENT OF MAGNETS

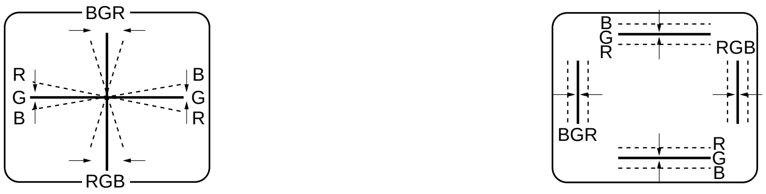
Figure 2.



4-POLE MAGNETS MOVEMENT

6-POLE MAGNETS MOVEMENT

Center Convergence by Convergence Magnets



INCLINE THE YOKE UP (OR DOWN)

INCLINE THE YOKE RIGHT (OR LEFT)

Circumference Convergence by DEF Yoke

Figure 3. Dot Movement Pattern

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” ON PAGE 3 OF THIS MANUAL.

(FOR 35”, 36”)

■ The following adjustments should be made when a complete realignment is required or a new picture tube is installed. Perform the adjustments in order as follows :

1. Color Purity
2. Convergence
3. White Balance

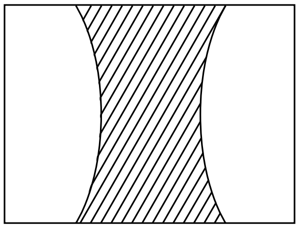
Note: The PURITY/CONVERGENCE MAGNET assembly and rubber wedges need mechanical positioning.
Refer to figure 1.
Mounting position of the purity magnet assembly should fit to same position as old one because slightly difference to the position depen on a kind of tube.

⋆ There are no adjustment of purity and convergence in some picture tube (Unified with purity magnet)

COLOR PURITY ADJUSTMENT

NOTE : Before attempting any purity adjustments, the receiver should be operated for at least fifteen minutes.

1. Evenly degauss the entire screen.
2. Set the CONTRAST and BRIGHTNESS Controls to the maximum.
3. Display built-in green raster using the TEST SIGNAL SELECTION function.
4. Loosen the clamp screw holding the deflection yoke (and remove the Rubber Wedges).
5. Slide the yoke forward or backward to provide vertical green belt (zone) in the picture screen.
6. Rotate and spread the tabs of the purity magnet (See figure 3.) around the neck of the picture tube until the green belt is in the center of the screen. At the same time, center the raster vertically by adjusting the magnet as shown below.



Green Belt

7. Move the yoke slowly forward or backward until a uniform green screen is obtained. Tighten the clamp screw of the yoke temporarily.
8. Check the purity of the red and blue raster.
9. Put four wedges into the space between the picture tube and the yoke to hold the yoke in the adjusted position. (See figure 2.)
   Do not tilt the yoke by excessive insertion of the wedge.
10. Remove cover paper of wedge and stick wedges on the tube to fix the yoke in the adjusted position.
    Fix the wedges with glass cloth tapes.

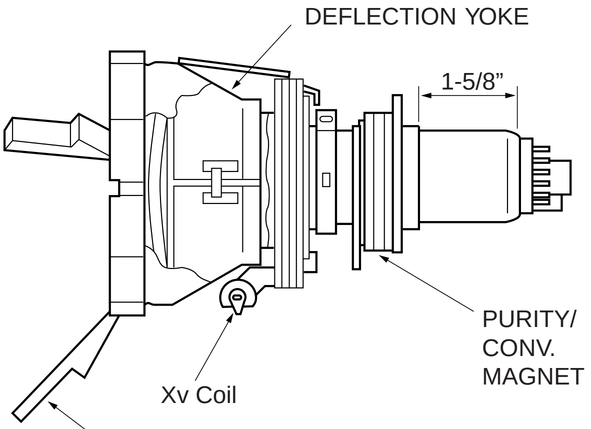


Figure 1.

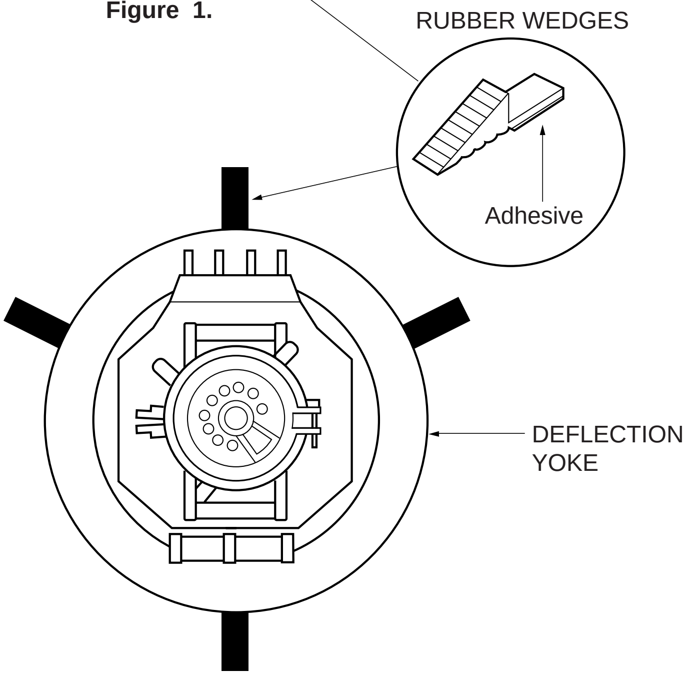


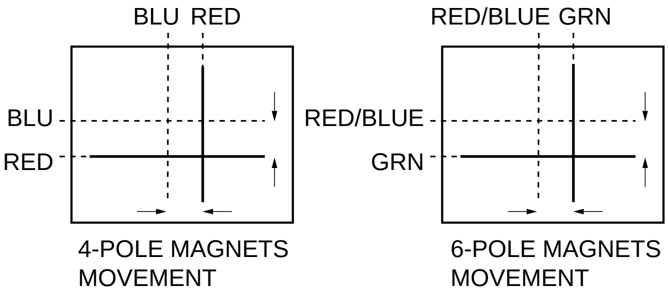
Figure 2.

CONVERGENCE ADJUSTMENTS

NOTE: Before attempting any convergence adjustments, the receiver should be operated for at least fifteen minutes.

■ CENTER CONVERGENCE ADJUSTMENT

1. Display built-in cross-dot pattern using the TEST SIGNAL SELECTION function.
2. Adjust the BRIGHTNESS and CONTRAST Controls for well defined pattern.
3. Loosen the tightening ring and adjust two tabs of the 4-Pole Magnets to change the angle between them (See figure 3.) and superimpose red and blue vertical lines in the center area of the picture screen. (See figure 4.)
4. Turn the both tabs at the same time keeping the constant angle to superimpose red and blue horizontal lines at the centre of the screen. (See figure 4.)
5. Adjust two tabs of 6-Pole Magnets to superimpose red/blue line with green one. Adjusting the angle affects the vertical lines and rotating both magnets affects the horizontal lines.
6. Repeat adjustments 3, 4, 5 keeping in mind red, green and blue movement, because 4-Pole Magnets and 6-Pole magnets interact and make dot movement complex.
7. After completing the “CENTER CONVERGENCE ADJUSTMENT” tighten the tightening ring to fix the magnets.


BLU RED
BLU
RED
4-POLE MAGNETS MOVEMENT
RED/BLUE GRN
RED/BLUE
GRN
6-POLE MAGNETS MOVEMENT

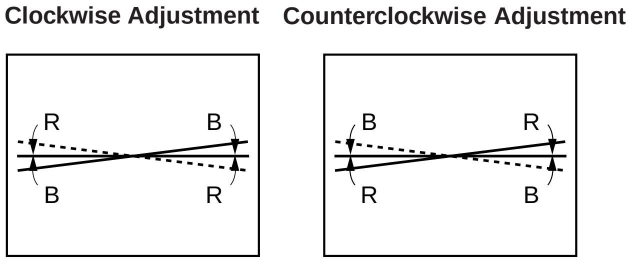
Center Convergence by Convergence Magnets

Figure 4.

■ Xv COIL ADJUSTMENT

Adjust the Xv coil (on the deflection yoke) to correct misconvergence at both sides on screen.

Use a hexagonal tip stick (plastic) to adjust the core of coil.


Clockwise Adjustment
R
B
B
R
Counterclockwise Adjustment
B
R
R
B

X_V Cross Pattern View

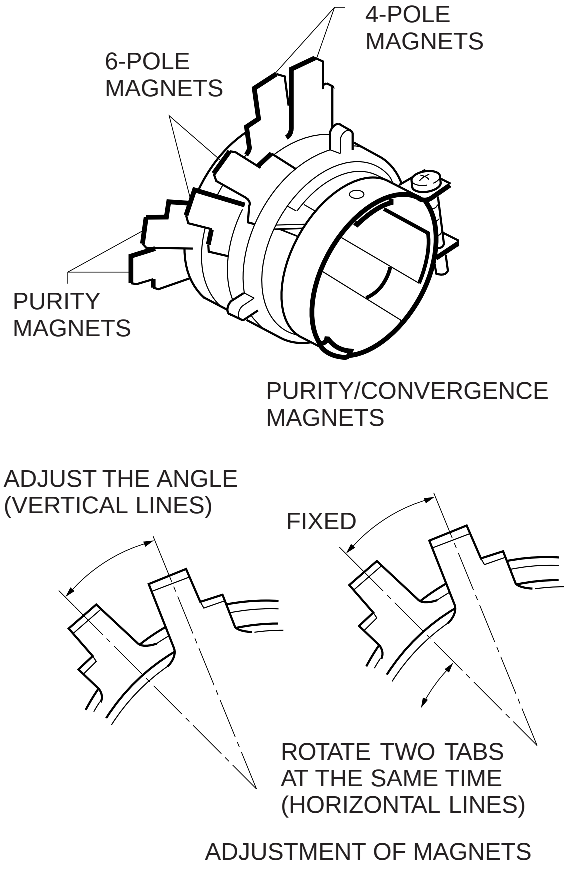
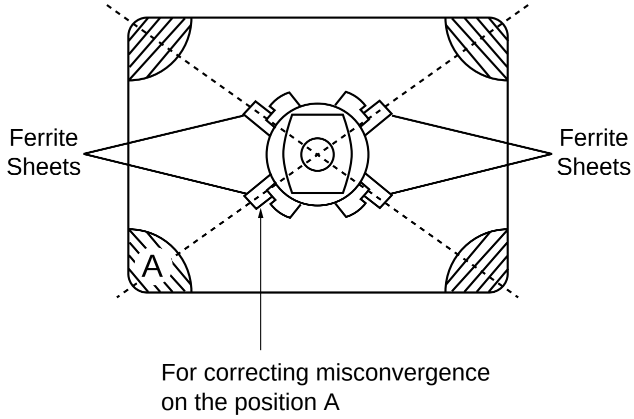

4-POLE MAGNETS
6-POLE MAGNETS
PURITY MAGNETS
PURITY/CONVERGENCE MAGNETS
ADJUST THE ANGLE (VERTICAL LINES)
FIXED
ROTATE TWO TABS AT THE SAME TIME (HORIZONTAL LINES)
ADJUSTMENT OF MAGNETS

Figure 3.

■ SCREEN-CORNER CONVERGENCE

When the misconvergence is still evident on corners even though the above adjustment is done, use the ferrite sheet (Part No. 23993622) to correct misconvergence.

1. Put ferrite sheets into the space under the yoke. Decide such position that misconvergence becomes minimum, watching picture screen. (See figure below.)
2. Remove cover paper of ferrite sheet to stick it in the place on the tube. Put adhesive tapes on ferrite sheets to fix.


Ferrite Sheets
Ferrite Sheets
A
For correcting misconvergence on the position A

SERVICE MODE

1. ENTERING TO SERVICE MODE

1) Press MUTE button once on Remote Control.

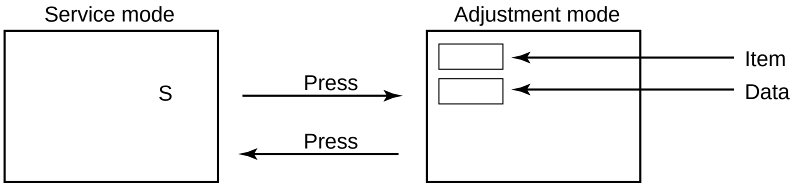
2) Press MUTE button again to keep pressing.

3) While pressing the MUTE button, press MENU button on TV set.

(Service mode display)

2. DISPLAYING THE ADJUSTMENT MENU

1) Press MENU button on TV.



3. KEY FUNCTION IN THE SERVICE MODE

The following key entry during display of adjustment menu provides special functions.

A single horizontal line ON/OFF:	TV (ANT)/VIDEO button (on TV)
Test signal selection :	TV (ANT)/VIDEO button (on Remote)
Selection of the adjustment items :	Channel ▲/▼ (on TV or Remote)
Change of the data value :	Volume ▲/▼ (on TV or Remote)
Adjustment menu mode ON/OFF :	MENU button (on TV)
Initialization of the memory (QA02) :	RECALL+Channel button on TV (▲)
Initialization of the self diagnostic data:	RECALL+Channel button on TV (▼)
“RCUT” selection :	1 button
“GCUT” selection :	2 button
“BCUT” selection :	3 button
“SCNT” selection :	4 button
“COLC” selection :	5 button
“TNTC” selection :	6 button
Self diagnostic display ON/OFF :	9 button

4. SELECTING THE ADJUSTING ITEMS

1) Every pressing of CHANNEL ▲ button in the service mode changes the adjustment items in the order of table-2. (▼ button for reverse order)

Refer to table-2 for preset data of adjustment mode.
(See SETTING & ADJUSTING DATA on page 17)

5. ADJUSTING THE DATA

1) Pressing of VOLUME ▲ or ▼ button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

6. EXIT FROM SERVICE MODE

1) Pressing POWER button to turn off the TV once.

■ INITIALIZATION OF MEMORY DATA OF QA02

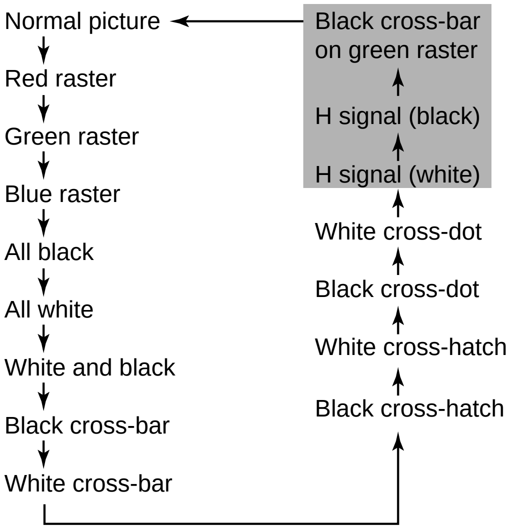
After replacing QA02, the following initialization is required.

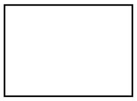
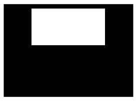
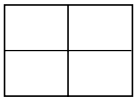
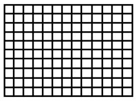
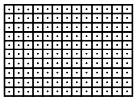
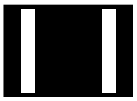
1. Enter the service mode, then select any register item.
2. Press and hold the RECALL button on the Remote, then press the CHANNEL ▲ button on the TV. The initialization of QA02 has been complated.
3. Check the picture carefully. If necessary, adjust any adjustment item above. Perform “Programming Channel Memory” on the owner’s manual.

CAUTION: Never attempt to initialize the data unless QA02 has been replaced.

7. TEST SIGNAL SELECTION

1) Every pressing of TV/VIDEO button on the Remote Control in the Service mode, changes the built-in test patterns on screen in the following order.


Normal picture
Red raster
Green raster
Blue raster
All black
All white
White and black
Black cross-bar
White cross-bar
Black cross-hatch
White cross-hatch
Black cross-dot
White cross-dot
H signal (white)
H signal (black)
Black cross-bar on green raster

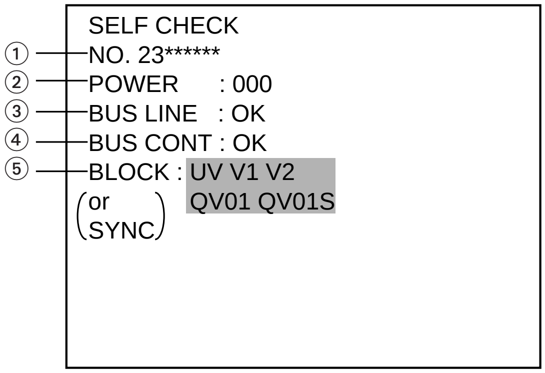
Signals	Picture
• Red raster • Green raster • Blue raster • All Black • All White	
• Black & White	
• Black cross-bar • White cross-bar • Black cross-bar on green raster	
• Black cross-hatch • White cross-hatch	
• Black cross-dot • White cross-dot	
• H signal (white) • H signal (black)	

Note: If the video cable is connected to the VIDEO1 INPUT jack, the built-in pattern signals are not displayed.

* The signals marked with ▨ are not usable to display in the Test signal for some model.

8. SELF DIAGNOSTIC FUNCTION

1) Press “9” button on Remote Control during display of adjustment menu in the service mode.
   The diagnosis will begin to check if interface among IC’s are executed properly.
2) During diagnosis, the following displays are shown.



```
SELF CHECK
NO. 23******
POWER     : 000
BUS LINE  : OK
BUS CONT  : OK
BLOCK : UV V1 V2
(or     QV01 QV01S
SYNC)
```

① Part number of microprocessor (QA01)

② Operation number of protection circuit (current limiter) . . . . “000” is normal.

③ BUS line check
- “OK” .... Normal
- “NG” .... SCL-GND or SAD-GND short circuit

④ BUS line ACK (acknowledge) check
- “OK” .... Normal
- Display of Location Number . . . . NG
- (Display example)
- “QA02 NG”, “H001 NG”, “Q501 NG” etc.

Note: The indication of failure place is only one place though failure places are plural. When repair of a failure place finishes, the next failure place is indicated. (The order of priority of indication is left side.)

⑤ Sync. signal check
- Green display ..... Normal
- Cyan display ...... No check
- Red display .... NG

UV .... TV mode
V1 .... VIDEO 1 mode
V2 .... VIDEO 2 mode

* The item marked with ▨ are not usable to display in the SELF DIAGNOSTIC FUNCTION for some model.

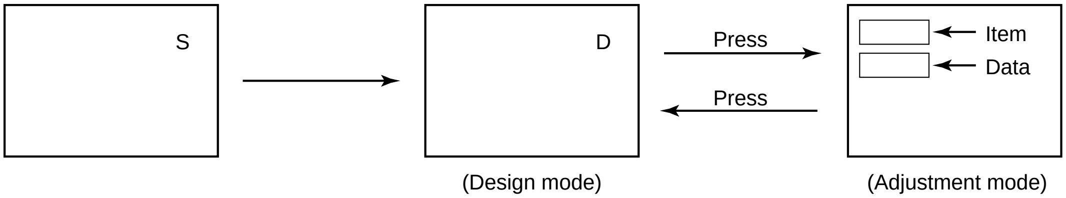
DESIGN MODE

1. ENTERING TO DESIGN MODE

1) Select the Service mode.

2) While pressing RECALL button on Remote and press MENU button on TV.

3) Press MENU button on TV.



When QA02 is initialized, items “OPT0”, “OPT1” and “OPT2” of DESIGN MODE are set to the data of the representative model of this chassis family.
Therefore, because ON-SCREEN specification remains in the state of the representative of model. This model is required to reset the data of items “OPT0”, “OPT1” and “OPT2” .

2. SELECTING THE ADJUSTING ITEMS

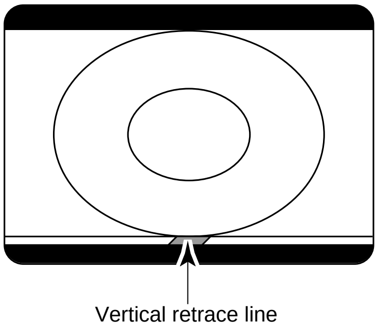
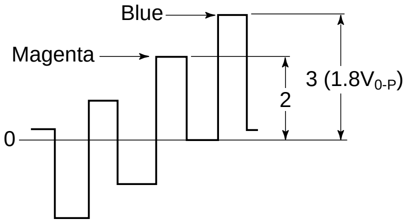
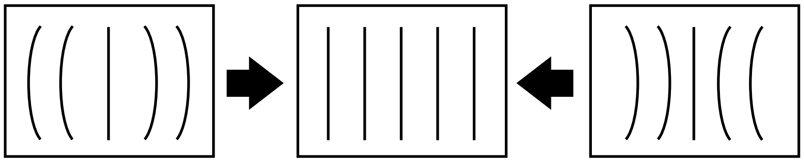
Every pressing of CHANNEL ▼ button in the design mode changes the adjustment items in the order of table-3.
(▲ button for reverse order)

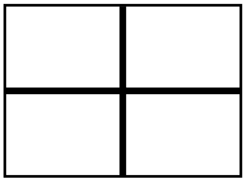
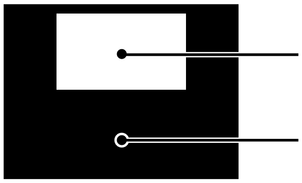
Refer to table-3 for data of design mode.
(See SETTING & ADJUSTING DATA on page 17)

3. ADJUSTING THE DATA

Pressing of VOLUME ▲ or ▼ button will change the value of data.

ELECTRICAL ADJUSTMENT

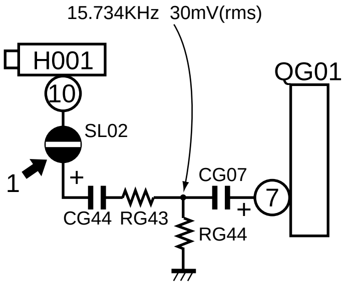
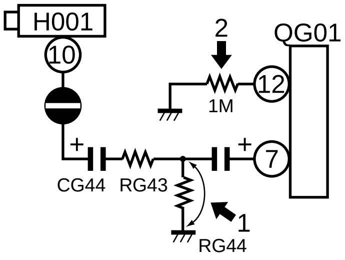
ITEM	ADJUSTMENT PROCEDURE
FOCUS VR ADJ	1. Enter the service mode, then select any register item. 2. Press the TV/VIDEO button on the Remote until the black cross-bar pattern appears on the screen. 3. Adjust the FOCUS control (on T461) for well defined scanning lines on the picture screen.
SUB-BRIGHTNESS (BRTC)	1. Constrict the picture height until the vertical retrace line appears adjusting the HEIGHT control on the MAIN board. 2. Adjust the CONTRAST to the minimum and BRIGHTNESS to the center. 3. Enter the service mode, then select "**BRTC**" register. 4. Adjust the data value so the belt of vertical retrace line just disappear. 5. Adjust the CONTRAST for the desired contrast. 6. Adjust the HEIGHT control. 
SUB-COLOR (COLC) SUB-TINT (TNTC)	1. Receive color-bar signal from color-bar generator. 2. Press the RESET button. 3. Connect oscilloscope to base of Q906 on CRT-D board. 4. Enter the service mode, then select "**COLC**". 5. Adjust the SUB-COLOR by pressing the VOLUME ▲ or ▼ button to achieve about $1V_{0-p}$ of blue bar. 6. Select "**TNTC**" register. 7. Adjust the data value to obtain the blue bar to magenta bar ratio of 3:2 as shown. 8. Select "**COLC**" register. 9. Adjust the data value to achieve $1.8V_{0-p}$ of blue bar on scope. 10. Check the picture with off-air signal. 
WIDTH (WID)	1. Call up the adjustment mode display, then select the item **WID**. 2. Press the VOLUME ▲ or ▼ button to get the picture so the left and right edges of raster begins to lack. 3. Press the VOLUME ▲ or ▼ button to advance the data by 7 steps. Note : Check the horizontal picture position is correct.
E-W PARABOLA (DPC)	1. Call up the adjustment mode display, then select the item **DPC**. 2. Press the TV/VIDEO button on Remote until the cross-hatch pattern appears on the screen. 3. Press the VOLUME ▲ or ▼ button to make vertical lines straight as shown below. 

ITEM	ADJUSTMENT PROCEDURE
HORIZONTAL POSITION (HPOS) VERTICAL POSITION (VPOS)	1. Call up the adjustment mode display, then select the item **HPOS** or **VPOS**. 2. Press the TV/VIDEO button on Remote until the white cross-bar or black cross-bar pattern appears on the screen. 3. Adjust the HORIZONTAL and VERTICAL position alternately by pressing the VOLUME ▲ or ▼ button for proper picture position. 4. Check the picture with off-air signal. 
HEIGHT (HIT)	1. Call up the adjustment mode display, then select the item **HIT**. 2. Press the VOLUME ▲ or ▼ button to get the picture so the top of raster begins to lack. 3. Press the VOLUME ▲ button to advance the data by 9 steps. Note : Check the vertical picture position is correct.
WHITE BALANCE (RCUT) (GCUT) (BCUT) (GDRV) (BDRV)	1. Adjust the CONTRAST control to the center, and BRIGHTNESS control to the maximum. 2. Call up the adjustment mode display, and press the TV/VIDEO button on Remote until the white and black pattern appears on the screen. 3. Adjust the following item with the CHANNEL ▲/▼ and VOLUME ▲/▼ buttons. RCUT → Data : 40H GCUT → Data : 40H BCUT → Data : 40H GDRV → Data : 40H BDRV → Data : 40H 4. Press the TV/VIDEO button on TV to display a single horizontal line on the screen. 5. Turn the SCREEN control (FBT) fully counterclockwise and gradually rotate clockwise until the first horizontal line appears slightly on the screen. 6. Press the TV/VIDEO button to display the normal picture. 7. Adjust the remaining two "?CUT" items (CHANNEL ▲/▼ → TV/VIDEO → VOLUME ▲/▼ in order) to obtain the slightly lighted horizontal line in the same levels of three (red, green, blue) colors. The line should be white if the adjustments are proper.  Bright area Adjust "GDRV" or "BDRV" to be white. Dark area Fine adjust "RCUT", "GCUT" or "BCUT" to be black.
PIP SUB-BRIGHTNESS (PBOF)	Adjust to match the PIP screen to the brightness, white balance and tint of the main picture.
PIP WHITE BALANCE (PGOF, PROF)	
PIP SUB-TINT (PHUE)	

MTS ADJUSTMENT (FOR N0S CHASSIS)

No.	ITEM	INPUT SIGNAL	ADJUSTMENT PROCEDURE
1	STEREO VCO (STVC)	• No signal	1. Display item **STVC**, and connect pin 9 of H002 to ground. 2. Connect frequency counter to pin 12 of H002. 3. Change data by Volume ▲/▼ buttons so that the reading of counter becomes value as close as 4fH (62.936kHz).
2	SAP VCO (SAVC)	• 78.670kHz 147mVrms → pin 9 of H002 • Monaural signal → ANT	1. Display item SAVC. 2. Change data by Volume ▲/▼ buttons so that the data becomes in the center of range for STA7=0 and STA8=1. SAVC 88H STA7:0 STA8:1
3	STEREO FILTER (STRF)	• 9.4kHz 600mVrm → pin 9 of H002 Monaural signal → ANT	1. Display item **STRF** on screen. 2. Change data by Volume ▲/▼ buttons so that the data becomes in the center of range for STA3=1. STRF 16H STA3:1
4	SAP FILTER (SAPF)	• 88kHz 110mVrms → pin 9 of H002 • Monaural signal → ANT	1. Display item **SAPF**. 2. Change data by Volume ▲/▼ buttons so that the data becomes in the center of range for STA4=1. SAPF 98H STA4:1
5	ATTENUATOR (ATT)	• 1kHz 30% mod. → ANT terminal	1. Connect rms meter to pin 12 of H002. 2. Display item **ATT** on screen. 3. Change data by Volume ▲/▼ buttons so that output at pin 12 of H002 becomes value as close as 130mVrms.
6	STEREO SEPARATION (WBAN)	• STEREO 300Hz R-channel only → ANT	1. Select “STEREO” mode from the MTS function in the Audio menu. 2. Display item **WBAN** on screen. 3. Connect oscilloscope to pin 14 of H002. 4. Change data by Volume ▲/▼ buttons so that 300Hz element on scope becomes minimum.
	(SPEC)	• STEREO 3kHz R-channel only → ANT	5. Display item **SPEC** on screen. 6. Change data by Volume ▲/▼ buttons so that 3kHz element on scope becomes minimum.

MTS ADJUSTMENT (FOR N0ES CHASSIS)

No.	ITEM	INPUT SIGNAL	ADJUSTMENT PROCEDURE
1	ATTENUATOR (ATT)	• 1kHz 30% mod. → ANT terminal	1. Connect rms meter to pin 34 of QG01. 2. Display item **ATT** on screen. 3. Change data by VOLUME ▲/▼ buttons so that the reading of meter becomes value as close as 137mVrms.
2	STEREO VCO (STVC)	• No signal	1. Short circuit RG44 with a jumper wire. 2. Display item **STVC** on screen. 3. Connect frequency counter to pin 34 of QG01. 4. Change data by VOLUME ▲/▼ buttons so that the reading of counter becomes value as close as 15.73kHz.
3	STEREO FILTER (STRF)	• 15.734kHz 30mV(rms)  15.734KHz 30mV(rms) H001 10 SL02 1 + CG44 RG43 CG07 + 7 RG44 QG01	1. Unsolder the solder link SL02. 2. Display item **STRF** on screen. 3. Connect oscilloscope to pin 34 of QG01. 4. Change data by VOLUME ▲/▼ button to minimize AC output level on scope. 5. Resolder SL02.
4	STEREO SEPARATION (WBAN)	• STEREO 300Hz R-channel only → ANT	1. Display item **WBAN** on screen. 2. Connect oscilloscope to pin 35 of QG01. 3. Change data by VOLUME ▲/▼ buttons so that 300Hz element on scope becomes minimum.
	(SPEC)	• STEREO 3kHz R-channel only → ANT	4. Display item **SPEC** on screen. 5. Change data by Volume ▲/▼ buttons so that 3kHz element on scope becomes minimum.
5	SAP VCO (SAVC)	• No signal  H001 10 2 QG01 12 1M + + 7 CG44 RG43 1 RG44	1. Shortcircuit RG44 with a short jumper. 2. Connect 1Mohm resistor between pin 12 of QG01 and ground. 3. Display item **SAVC** on screen. 4. Connect frequency counter to pin 34 of QG01. 5. Change data by VOLUME ▲/▼ buttons so that the reading of counter becomes value as close as 78.67kHz. 6. Remove the short jumper and 1M ohm resistor.

CIRCUIT CHECKS

HIGH VOLTAGE CHECK

CAUTION: There is no HIGH VOLTAGE ADJUSTMENT on this chassis. Checking should be done following the steps below.

1. Connect an accurate high voltage meter to the second anode of the picture tube.
2. Turn on the receiver. Set the BRIGHTNESS and CONTRAST controls to minimum (zero beam current).
3. High voltage must be measured below (B) kV.

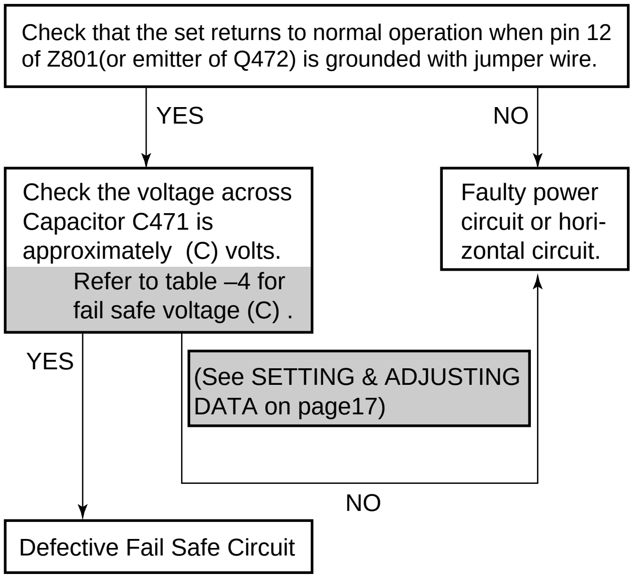
   Refer to table-1 for high voltage (B).
   (See SETTING & ADJUSTING DATA on page 17)
4. Vary the BRIGHTNESS control to both extremes to be sure the high voltage does not exceed the limit under any conditions.

FS CIRCUIT CHECK

The Fail Safe (FS) circuit check is indispensable for the final check in servicing. Checking should be done following the steps below.

1. Turn the receiver on and press the RESET button.
2. Temporarily short TP-(R) and TP-(X) with a jumper wire. Raster and sound will disappear.
3. The receiver must remain in this state even after removing the jumper wire. This is the evidence that the FS circuit is functioning properly.
4. To obtain a picture again, temporarily turn the receiver off and allow the FS circuit more than 5 seconds to reset. Then turn the power switch on to produce a normal picture.

Troubleshooting Guide for Fail Safe Circuit


Check that the set returns to normal operation when pin 12 of Z801(or emitter of Q472) is grounded with jumper wire.
YES
NO
Check the voltage across Capacitor C471 is approximately (C) volts.
Refer to table –4 for fail safe voltage (C) .
Faulty power circuit or horizontal circuit.
YES
(See SETTING & ADJUSTING DATA on page17)
NO
Defective Fail Safe Circuit

CHAPTER 2 SPECIFIC INFORMATIONS

SETTING & ADJUSTING DATA

【SAFETY INSTRUCTIONS】

		32"	36"
HIGH VOLTAGE AT ZERO BEAM:	(A)	31.0kV	31.9kV
MAX HIGH VOLTAGE:	(B)	32.4 kV	33.3kV

Table-1

【SERVICE MODE】

ADJUSTING ITEMS AND DATAS IN THE SERVICE MODE:

Item	Name of adjustment	Preset	32"	36"
RCUT	R CUTOFF	40H	←	←
GCUT	G CUTOFF	40H	←	←
BCUT	B CUTOFF	40H	←	←
GDRV	G DRIVE	40H	←	←
BDRV	B DRIVE	40H	←	←
SCNT	SUB-CONTRAST	08H	←	←
BRTC	SUB-BRIGHT	40H	←	←
COLC	SUB-COLOR	40H	←	←
TNTC	SUB-TINT	40H	←	←
SAVC	SAP VCO	88H	←	←
ATT	ATTENUATOR	08H	←	←
SAPF	SAP FILTER	88H	←	←
STVC	STEREO VCO	1CH	←	←
STRF	STEREO FILTER	16H	←	←
SPEC	SPECTRAL	30H	←	←
WBAN	STEREO SEPARATION	22H	←	←
HPOS	HORIZ. POSITION	16H	←	←
VPOS	VERT. POSITION	03H	←	←

Item	Name of adjustment	Preset	32"	36"
HIT	HEIGHT	1EH	←	26H
LIN	V-LINEARITY	06H	06H	07H
VSC	V-S CORRECTION	04H	04H	02H
VPS	V-SHIFT	1BH	←	←
VCP	V-COMPENSATION	03H	←	←
WID	PICTURE WIDTH	18H	18H	35H
DPC	E-W PARABOLA (DPC)	0AH	0AH	17H
CNR	E-W CORNER	07H	07H	09H
TRAP	TRAPEZIUM	09H	09H	08H
HCP	H-COMPENSATION	00H	←	←
VFC	V-F CORRECTION	0FH	←	←
PCOL	PIP COLOR	0FH	←	←
PHUE	PIP TINT	11H	←	←
DAC	DAC	03H	←	←
PGOF	PIP	36H	←	←
PROF	PIP	17H	←	←
PBOF	PIP	17H	←	←
RGBB	RGB BRIGHT	0BH	←	←

Table-2

【DESIGN MODE】

ADJUSTING ITEMS AND DATAS IN THE DESIGN MODE:

Item	Name of adjustment	Preset Data	Data (32", 36")	Remarks
OPT1	OPTION 1	84H	04H	
OPT2	OPTION 2	01H	01H	

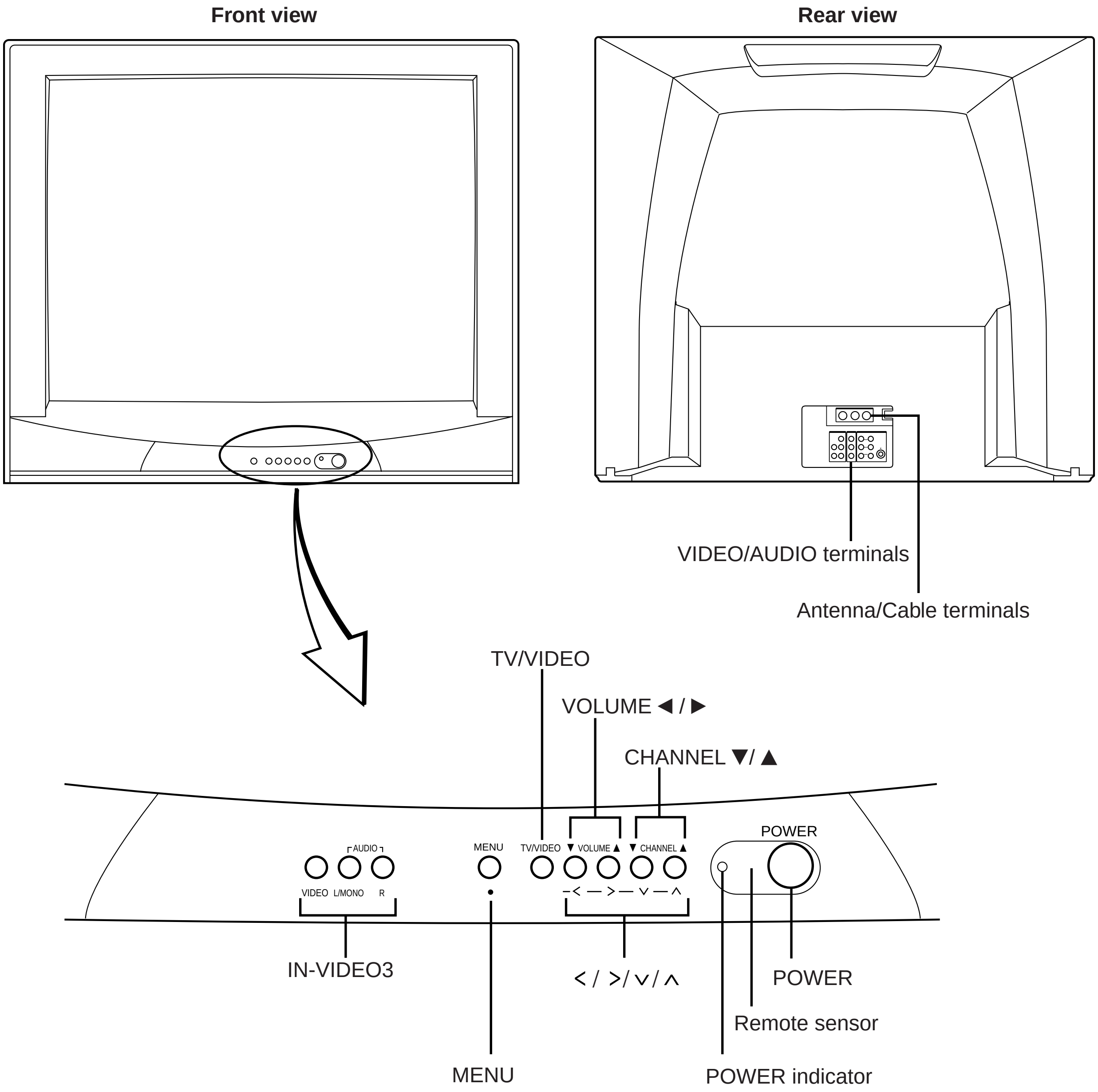
Table-3

【CIRCUIT CHECKS】

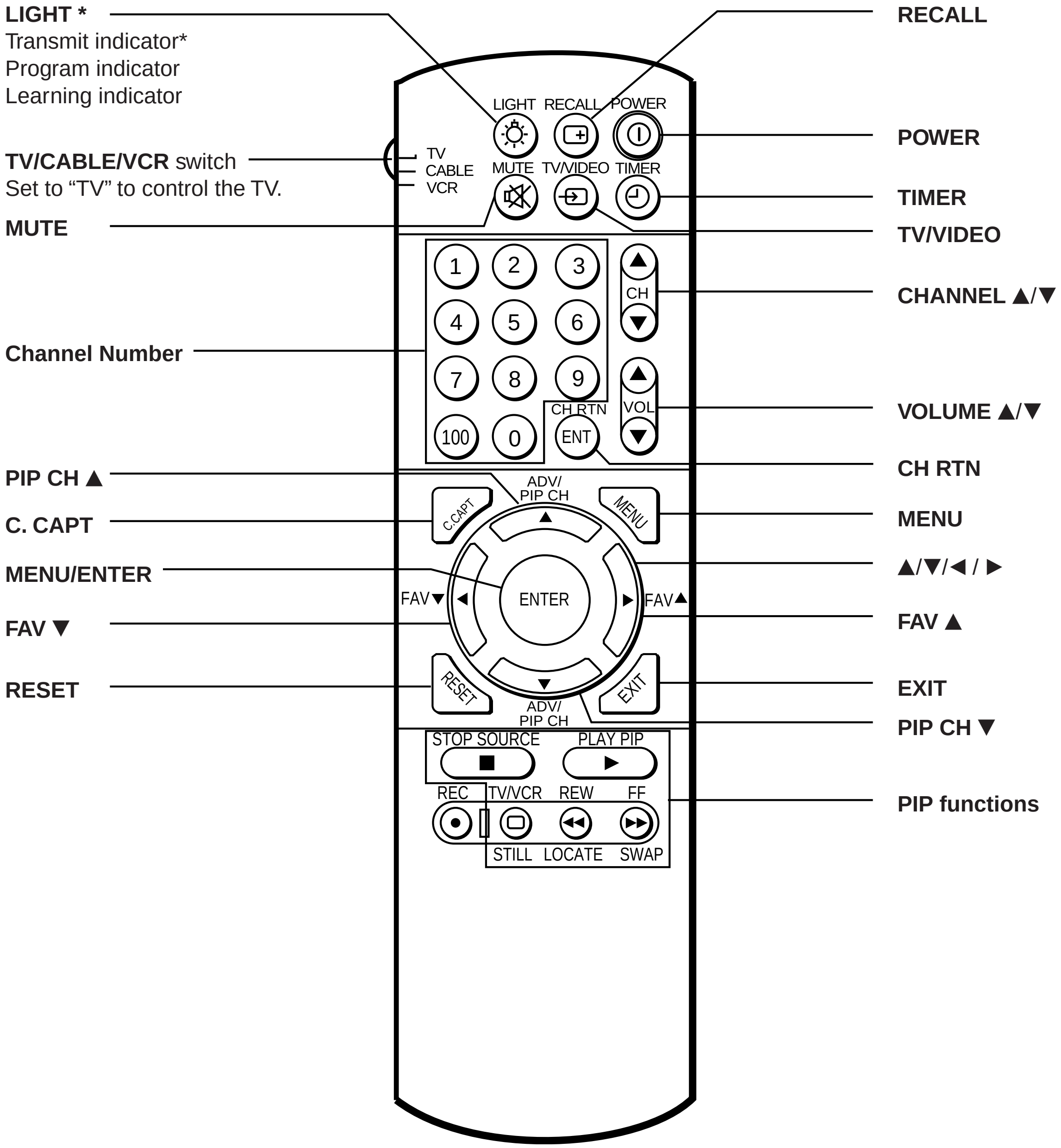
		32"	36"
FBT DETECTION VOLTAGE	(C)	21.88 V	22.77V

Table-4

LOCATION OF CONTROLS (Representative: 36AX60)


Front view
Rear view
VIDEO/AUDIO terminals
Antenna/Cable terminals
TV/VIDEO
VOLUME ◄ / ►
CHANNEL ▼/ ▲
AUDIO
VIDEO
L/MONO
R
MENU
TV/VIDEO
▼ VOLUME ▲
▼ CHANNEL ▲
POWER
IN-VIDEO3
< / >/ ∨ / ∧
POWER
Remote sensor
MENU
POWER indicator

Remote control


LIGHT *
Transmit indicator*
Program indicator
Learning indicator
TV/CABLE/VCR switch
Set to "TV" to control the TV.
MUTE
Channel Number
PIP CH ▲
C. CAPT
MENU/ENTER
FAV ▼
RESET
RECALL
POWER
TIMER
TV/VIDEO
CHANNEL ▲/▼
VOLUME ▲/▼
CH RTN
MENU
▲/▼/◀ / ▶
FAV ▲
EXIT
PIP CH ▼
PIP functions
LIGHT
RECALL
POWER
TV
CABLE
VCR
MUTE
TV/VIDEO
TIMER
1
2
3
4
5
6
7
8
9
100
0
CH RTN
ENT
CH
VOL
ADV/
PIP CH
C.CAPT
MENU
ENTER
FAV▼
FAV▲
RESET
EXIT
ADV/
PIP CH
STOP SOURCE
PLAY PIP
REC
TV/VCR
REW
FF
STILL
LOCATE
SWAP

PROGRAMMING CHANNEL MEMORY

The channel memory is the list of TV channel numbers your TV will stop on when you press the CHANNEL ▲ or ▼ button.
First, use the TV/CABLE and CH PROGRAM functions to preset all active channels in your area automatically.
If necessary, arrange the preset channels with the ADD/ERASE functions so that you can tune into only desired channels.
Note: If you utilize both ANT-1 and ANT-2 terminals for some model, perform programming channels for each input source.

TV/CABLE function

1. Press **MENU**, then press ▶ or ◀ until the SET UP menu appears.
2. Press ▼ (or ▲) until "TV/CABLE" is highlighted.
3. Press ▶ or ◀ to highlight either "TV" or "CABLE", whichever you use.

CH PROGRAM function

1. Select "CH PROGRAM" following steps 1 and 2 above.
2. Press ▶ or ◀ to start channel programming.
   The TV will automatically cycle through all the TV or CABLE channels selected by the TV/CABLE function, and store active channels in the channel memory.
3. When channel programming is complete, you will see the message to the right appears.
4. Press **CHANNEL** ▲ or ▼ to make sure the channel programming has been done properly.

ADD/ERASE function

After performing the CH PROGRAM function, you can add or erase specific channels.

1. Select the channel you want to erase using the **CHANNEL** ▲ or ▼ button, or select the channel you want to add using the **Channel Number** buttons.
2. Press **MENU**, then press ▶ or ◀ until the SET UP menu appears.
3. Press ▼ (or ▲) until "ADD/ERASE" is highlighted.
4. Press ▶ or ◀ :
   To erase the channel
   Press the button until "ERASE" is highlighted.

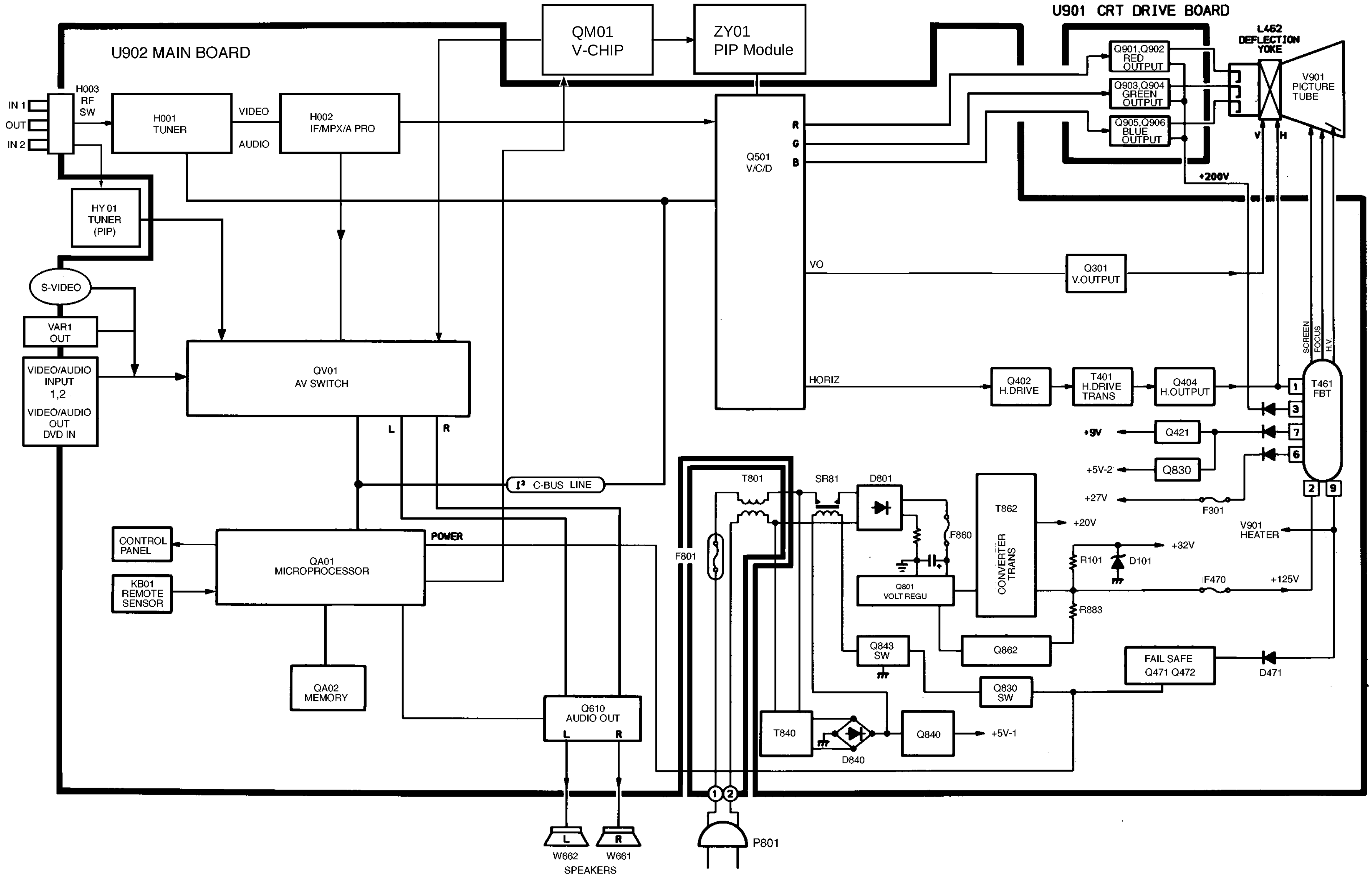
   To add the channel
   Press the button until "ADD" is highlighted.
5. Repeat steps 1 to 4 for other channels.

You have now completed the channel programming.

Note: The CHANNEL ▼/▲ buttons on the TV function as the ▼/▲ buttons while a menu is on the screen.

*Please refer to owner's manual in detil.

CIRCUIT BLOCK DIAGRAM


U902 MAIN BOARD
U901 CRT DRIVE BOARD
QM01
V-CHIP
ZY01
PIP Module
IN 1
OUT
IN 2
H003
RF
SW
H001
TUNER
VIDEO
AUDIO
H002
IF/MPX/A PRO
HY 01
TUNER
(PIP)
S-VIDEO
VAR1
OUT
VIDEO/AUDIO
INPUT
1,2
VIDEO/AUDIO
OUT
DVD IN
QV01
AV SWITCH
L
R
Q501
V/C/D
R
G
B
VO
HORIZ
Q901,Q902
RED
OUTPUT
Q903,Q904
GREEN
OUTPUT
Q905,Q906
BLUE
OUTPUT
L462
DEFLECTION
YOKE
V901
PICTURE
TUBE
V
H
+200V
Q301
V.OUTPUT
SCREEN
FOCUS
H.V.
Q402
H.DRIVE
T401
H.DRIVE
TRANS
Q404
H.OUTPUT
T461
FBT
1
3
7
6
2
9
+9V
Q421
+5V-2
Q830
+27V
F301
V901
HEATER
+125V
IF470
D471
FAIL SAFE
Q471 Q472
I² C-BUS LINE
CONTROL
PANEL
KB01
REMOTE
SENSOR
QA01
MICROPROCESSOR
POWER
QA02
MEMORY
Q610
AUDIO OUT
L
R
W662
W661
SPEAKERS
F801
T801
SR81
D801
F860
Q801
VOLT REGU
T862
CONVERTER
TRANS
+20V
+32V
R101
D101
R883
Q843
SW
Q862
Q830
SW
T840
D840
Q840
+5V-1
1
2
P801

CHASSIS AND CABINET REPLACEMENT PARTS LIST

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE “X-RAY RADIATION PRECAUTION”, “SAFETY PRECAUTION” AND “PRODUCT SAFETY NOTICE” ON PAGE 3 OF THIS MANUAL.

CAUTION: The international hazard symbols “⚠” in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE. Do not degrade the safety of the receiver through improper servicing.

NOTICE:

- *The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.*
- *The PC board assembly with * mark is no longer available after the end of the production.*

Model : 32AX60,36AX60

Capacitors .... CD : Ceramic Disk   PF : Plastic Film   EL : Electrolytic
Resistors .... CF : Carbon Film   CC : Carbon Composition   MF : Metal Film
OMF : Oxide Metal Film   VR : Variable Resistor   FR : Fusible Resistor
(All CD and PF capacitors are ±5%, 50V and all resistors, ±5%, 1/6W unless otherwise noted.)

CAPACITORS

Location No.	Part No.	Description
C101	24796339	EL, 3.3μF, ±20%, 35V
C102	24793221	EL, 220μF, ±20%, 10V
C103	24794100	EL, 10μF, ±20%, 16V
C105	24212102	CD, 1000pF, ±10%
C106	24797479	EL, 4.7μF, ±20%, 50V
C107	24763221	EL, 220μF, ±20%, 16V
C110	24794470	EL, 47μF, ±20%, 16V
C112	24793101	EL, 100μF, ±20%, 10V
C115	24212102	CD, 1000pF, ±10%
C117	24763221	EL, 220μF, ±20%, 16V
C150	24794330	EL, 33μF, ±20%, 16V
C201	24539104	PF, 0.1μF
C204	24797010	EL, 1μF, ±20%, 50V
C205	24794100	EL, 10μF, ±20%, 16V
C207	24436270	CD, 27pF
C208	24436270	CD, 27pF
C209	24436270	CD, 27pF
C216	24797100	EL, 10μF, ±20%, 50V
C220	24797229	EL, 2.2μF, ±20%, 50V
C221	24232103	CD, 0.01μF, +80%, -20%
C222	24232103	CD, 0.01μF, +80%, -20%
C223	24232103	CD, 0.01μF, +80%, -20%
C224	24539104	PF, 0.1μF
C225	24539104	PF, 0.1μF
C226	24539104	PF, 0.1μF
C245	24206108	EL, 0.1μF, ±20%, 50V
C261	24539104	PF, 0.1μF
C262	24539104	PF, 0.1μF
C263	24539104	PF, 0.1μF
C305	24617912	EL, 2.2μF, ±10%, 50V (32AX60)
C305	24617915	EL, 1μF, ±10%, 50V (36AX60)
C306	24073058	EL, 2200μF, ±20%, 25V (32AX60)
C306	24073059	EL, 3300μF, ±20%, 25V (36AX60)
C307	24693273	PF, 0.027μF, 100V (32AX60)
C307	24693473	PF, 0.047μF, 100V (36AX60)
C308	24668221	EL, 220μF, ±20%, 35V
C309	24591102	PF, 1000pF
C310	24796102	EL, 1000μF, ±20%, 35V
C311	24435820	CD, 82pF, 500V
C313	24082057	PF, 0.22μF, 100V
C314	24539104	PF, 0.1μF
C317	24214471	CD, 470pF, ±10%, 500V
C319	24212102	CD, 1000pF, ±10%
C320	24668101	EL, 100μF, ±20%, 35V
C323	24538474	PF, 0.47μF
C325	24538683	PF, 0.068μF
C326	24539104	PF, 0.1μF
C327	24617915	EL, 1μF, ±10%, 50V
C337	24797229	EL, 2.2μF, ±20%, 50V
C360	24793221	EL, 220μF, ±20%, 10V
C361	24794101	EL, 100μF, ±20%, 16V
C403	24591103	PF, 0.01μF
C404	24797010	EL, 1μF, ±20%, 50V
C407	24539104	PF, 0.1μF
C410	24232103	CD, 0.01μF, +80%, -20%
C413	24214821	CD, 820pF, ±10%, 500V
C415	24567273	PF, 0.027μF
C416	24678010	EL, 1μF, ±20%, 200V
C417	24214391	CD, 390pF, ±10%, 500V
C421	24794101	EL, 100μF, ±20%, 16V
C430	24232103	CD, 0.01μF, +80%, -20%
C431	24794101	EL, 100μF, ±20%, 16V
C439	24829433	PF, 0.043μF, 400V (32AX60)
C439	24829753	PF, 0.075μF, 400V (36AX60)
⚠C440	24082958	PF, 7800pF, ±3%, 1500V (32AX60)
⚠C440	24082959	PF, 8000pF, ±3%, 1500V (36AX60)
⚠C442	24082920	PF, 0.39μF, 315V (32AX60)
⚠C442	24082921	PF, 0.43μF, 315V (36AX60)
⚠C444	24082611	PF, 6200pF, ±3%, 1800V (32AX60)
⚠C444	24082610	PF, 5600pF, ±3%, 1800V (36AX60)
C445	24828563	PF, 0.056μF, 200V
C446	24679100	EL, 10μF, ±20%, 250V
C448	24640908	EL, 33μF, ±20%, 160V
C449	24666102	EL, 1000μF, ±20%, 16V

Location No.	Part No.	Description
C457	24591222	PF, 2200pF
C463	24212152	CD, 1500pF, ±10%
C464	24640872	EL, 10μF, ±20%, 100V
C466	24206108	EL, 0.1μF, ±20%, 50V
⚠C467	24095881	PF, 0.018μF, ±3%, 630V (32AX60)
⚠C467	24095883	PF, 0.015μF, ±3%, 630V (36AX60)
C471	24797479	EL, 4.7μF, ±20%, 50V
C474	24794100	EL, 10μF, ±20%, 16V
C477	24591104	PF, 0.1μF
C478	24591563	PF, 0.056μF (32AX60)
C480	24747220	EL, 22μF, ±20%, 50V
C481	24538474	PF, 0.47μF
C482	24797478	EL, 0.47μF, ±20%, 50V
C499	24212102	CD, 1000pF, ±10%
C501	24436102	CD, 1000pF
C504	24591222	PF, 2200pF
C505	24353120	CD, 12pF, CH
C510	24763101	EL, 100μF, ±20%, 16V
C511	24232103	CD, 0.01μF, +80%, -20%
C512	24206228	EL, 0.22μF, ±20%, 50V
C582	24232103	CD, 0.01μF, +80%, -20%
C583	24762471	EL, 470μF, ±20%, 10V
C612	24794470	EL, 47μF, ±20%, 16V
C613	24232103	CD, 0.01μF, +80%, -20%
C661	24212102	CD, 1000pF, ±10%
C662	24212102	CD, 1000pF, ±10%
C663	24666100	EL, 10μF, ±20%, 16V
C671	24795470	EL, 47μF, ±20%, 25V
C672	24795470	EL, 47μF, ±20%, 25V
C673	24669229	EL, 2.2μF, ±20%, 50V
C674	24669229	EL, 2.2μF, ±20%, 50V
C675	24669229	EL, 2.2μF, ±20%, 50V
C676	24539104	PF, 0.1μF
C677	24539104	PF, 0.1μF
C678	24669229	EL, 2.2μF, ±20%, 50V
C679	24795470	EL, 47μF, ±20%, 25V
C681	24667102	EL, 1000μF, ±20%, 25V
C682	24668101	EL, 100μF, ±20%, 35V
C683	24667102	EL, 1000μF, ±20%, 25V
C704	24232103	CD, 0.01μF, +80%, -20%
C705	24232103	CD, 0.01μF, +80%, -20%
C707	24794101	EL, 100μF, ±20%, 16V
C713	24790100	EL, 10μF, ±20%, 160V
C714	24436101	CD, 100pF
C715	24214472	CD, 4700pF, ±10%, 500V
C716	24436101	CD, 100pF
C717	24214472	CD, 4700pF, ±10%, 500V
C718	24794470	EL, 47μF, ±20%, 16V
C719	24435560	CD, 56pF, 500V
C720	24790100	EL, 10μF, ±20%, 160V
C721	24794470	EL, 47μF, ±20%, 16V
C726	24212102	CD, 1000pF, ±10%
C801	24095670	PF, 0.22μF, ±20%, AC125V
C802	24095852	PF, 0.082μF, ±20%, AC125V
C805	24092623	CD, 0.01μF, +80%, -20%, AC250V
C806	24092623	CD, 0.01μF, +80%, -20%, AC250V
C808	24667221	EL, 220μF, ±20%, 25V
C810	24086061	EL, 470μF, ±20%, 200V
C811	24092597	CD, 4700pF, ±20%, AC250V
C811A	23960136	Adhesive, TSE3843-W

Location No.	Part No.	Description
C812	24092597	CD, 4700pF, ±20%, AC250V
C813	24092597	CD, 4700pF, ±20%, AC250V
C815	24092597	CD, 4700pF, ±20%, AC250V
C816	24092597	CD, 4700pF, ±20%, AC250V
C817	24092339	CD, 330pF, ±10%, 2kV
C818	24082402	PF, 2200pF, ±3%, 1250V
C821	24214471	CD, 470pF, ±10%, 500V
C822	24567104	PF, 0.1μF
C823	24212471	CD, 470pF, ±10%
C829	24591122	PF, 1200pF
C832	24794470	EL, 47μF, ±20%, 16V
C840	24795221	EL, 220μF, ±20%, 25V
C842	24792101	EL, 100μF, ±20%, 6.3V
C843	24797479	EL, 4.7μF, ±20%, 50V
C884	24086049	EL, 330μF, ±20%, 160V
C885	24214471	CD, 470pF, ±10%, 500V
C889	24796222	EL, 2200μF, ±20%, 35V
C891	24567104	PF, 0.1μF
C893	24092339	CD, 330pF, ±10%, 2kV
C898	24539224	PF, 0.22μF
C902	24092345	CD, 1000pF, ±10%, 2kV
C904	24436391	CD, 390pF
C905	24436391	CD, 390pF
C907	24436391	CD, 390pF
C909	24679220	EL, 22μF, ±20%, 250V
C910	24797478	EL, 0.47μF, ±20%, 50V
C911	24794100	EL, 10μF, ±20%, 16V
C912	24763471	EL, 470μF, ±20%, 16V
C913	24794100	EL, 10μF, ±20%, 16V
C914	24232103	CD, 0.01μF, +80%, -20%
C920	24214101	CD, 100pF, ±10%, 500V
C921	24232103	CD, 0.01μF, +80%, -20%
C922	24232103	CD, 0.01μF, +80%, -20%
CA13	24212101	CD, 100pF, ±10%
CA28	24539104	PF, 0.1μF
CA33	24232103	CD, 0.01μF, +80%, -20%
CA36	24212101	CD, 100pF, ±10%
CA37	24212101	CD, 100pF, ±10%
CA38	24212101	CD, 100pF, ±10%
CA42	24794100	EL, 10μF, ±20%, 16V
CA43	24232103	CD, 0.01μF, +80%, -20%
CA44	24232103	CD, 0.01μF, +80%, -20%
CA68	24794100	EL, 10μF, ±20%, 16V
CA69	24232103	CD, 0.01μF, +80%, -20%
CB01	24797470	EL, 47μF, ±20%, 50V
CB41	24763221	EL, 220μF, ±20%, 16V
CB48	24436101	CD, 100pF
CB60	24085944	EL, 2.2μF, ±20%, 50V, Non-Polar
CB61	24591102	PF, 1000pF
CB62	24436561	CD, 560pF
CB63	24591122	PF, 1200pF
CD80	24794100	EL, 10μF, ±20%, 16V
CG60	24797220	EL, 22μF, ±20%, 50V
CG61	24797220	EL, 22μF, ±20%, 50V
CG62	24797229	EL, 2.2μF, ±20%, 50V
CG63	24797010	EL, 1μF, ±20%, 50V
CG65	24232103	CD, 0.01μF, +80%, -20%
CG66	24794470	EL, 47μF, ±20%, 16V
CG67	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CG68	24794100	EL, 10μF, ±20%, 16V
CG69	24797479	EL, 4.7μF, ±20%, 50V
CG70	24794100	EL, 10μF, ±20%, 16V

SPECIFIC INFORMATIONS

Location No.	Part No.	Description
CG71	24794100	EL, 10μF, ±20%, 16V
CG72	24794221	EL, 220μF, ±20%, 16V
CM15	24232103	CD, 0.01μF, +80%, -20%
CM33	24232103	CD, 0.01μF, +80%, -20%
CM40	24539104	PF, 0.1μF
CM41	24539104	PF, 0.1μF
CM42	24763101	EL, 100μF, ±20%, 16V
CM43	24232103	CD, 0.01μF, +80%, -20%
CM44	24232103	CD, 0.01μF, +80%, -20%
CM51	24539104	PF, 0.1μF
CM58	24539104	PF, 0.1μF
CM70	24085981	EL, 10μF, ±20%, 16V, Non-Polar
CM71	24436101	CD, 100pF
CM72	24794100	EL, 10μF, ±20%, 16V
CM73	24794100	EL, 10μF, ±20%, 16V
CR01	24539104	PF, 0.1μF
CR02	24539104	PF, 0.1μF
CR03	24539104	PF, 0.1μF
CS02	24797229	EL, 2.2μF, ±20%, 50V
CS04	24797229	EL, 2.2μF, ±20%, 50V
CS08	24797229	EL, 2.2μF, ±20%, 50V
CS10	24797229	EL, 2.2μF, ±20%, 50V
CS14	24797229	EL, 2.2μF, ±20%, 50V
CS16	24797229	EL, 2.2μF, ±20%, 50V
CS25	24797229	EL, 2.2μF, ±20%, 50V
CS26	24797229	EL, 2.2μF, ±20%, 50V
CS32	24794100	EL, 10μF, ±20%, 16V
CS33	24794100	EL, 10μF, ±20%, 16V
CS40	24797010	EL, 1μF, ±20%, 50V
CS42	24797010	EL, 1μF, ±20%, 50V
CS43	24436331	CD, 330pF
CS44	24436331	CD, 330pF
CS45	24436331	CD, 330pF
CS46	24436331	CD, 330pF
CS47	24436331	CD, 330pF
CS48	24436331	CD, 330pF
CS49	24436331	CD, 330pF
CS50	24436331	CD, 330pF
CS51	24212102	CD, 1000pF, ±10%
CS52	24212102	CD, 1000pF, ±10%
CS70	24794220	EL, 22μF, ±20%, 16V
CS71	24794220	EL, 22μF, ±20%, 16V
CV01	24206108	EL, 0.1μF, ±20%, 50V
CV03	24206108	EL, 0.1μF, ±20%, 50V
CV05	24232103	CD, 0.01μF, +80%, -20%
CV07	24591223	PF, 0.022μF
CV09	24206108	EL, 0.1μF, ±20%, 50V
CV11	24232103	CD, 0.01μF, +80%, -20%
CV13	24206108	EL, 0.1μF, ±20%, 50V
CV27	24206108	EL, 0.1μF, ±20%, 50V
CV29	24232103	CD, 0.01μF, +80%, -20%
CV31	24206108	EL, 0.1μF, ±20%, 50V
CV36	24794220	EL, 22μF, ±20%, 16V
CV38	24763471	EL, 470μF, ±20%, 16V
CV39	24232103	CD, 0.01μF, +80%, -20%
CV41	24591223	PF, 0.022μF
CV45	24232103	CD, 0.01μF, +80%, -20%
CV46	24794101	EL, 100μF, ±20%, 16V
CV47	24794100	EL, 10μF, ±20%, 16V
CV48	24232103	CD, 0.01μF, +80%, -20%
CV49	24794100	EL, 10μF, ±20%, 16V
CV60	24763471	EL, 470μF, ±20%, 16V
CV61	24762471	EL, 470μF, ±20%, 10V

Location No.	Part No.	Description
CZ03	24092743	Chip, 0.47μF, +80%, -20%, 10V
CZ05	24109103	Chip, 0.01μF, ±10%, 25V
CZ07	24092730	Chip, 0.1μF, ±10%, 16V
CZ09	24105220	Chip, 22pF
CZ10	24105100	Chip, 10pF, ±0.5pF
CZ11	24105220	Chip, 22pF
CZ12	24109103	Chip, 0.01μF, ±10%, 25V
CZ13	24109103	Chip, 0.01μF, ±10%, 25V
CZ14	24203100	EL, 10μF, ±20%, 16V
CZ17	24109103	Chip, 0.01μF, ±10%, 25V
CZ19	24105181	Chip, 180pF
CZ20	24109103	Chip, 0.01μF, ±10%, 25V
CZ21	24109122	Chip, 0.01μF, ±10%, 25V
CZ22	24203100	EL, 10μF, ±20%, 16V
CZ23	24109103	Chip, 0.01μF, ±10%, 25V
CZ24	24109103	Chip, 0.01μF, ±10%, 25V
CZ25	24203100	EL, 10μF, ±20%, 16V
CZ26	24109103	Chip, 0.01μF, ±10%, 25V
CZ28	24109103	Chip, 0.01μF, ±10%, 25V
CZ29	24109103	Chip, 0.01μF, ±10%, 25V
CZ30	24203100	EL, 10μF, ±20%, 16V
CZ31	24092730	Chip, 0.1μF, ±10%, 16V
CZ32	24105150	Chip, 15pF
CZ33	24105390	Chip, 330pF
CZ34	24105150	Chip, 15pF
CZ35	24105390	Chip, 330pF
CZ37	24203100	EL, 10μF, ±20%, 16V
CZ38	24203100	EL, 10μF, ±20%, 16V
CZ41	24105470	Chip, 47pF
CZ42	24105470	Chip, 47pF
CZ45	24105100	Chip, 10pF, ±0.5pF

RESISTORS

Location No.	Part No.	Description
R101	24382223	OMF, 22k ohm, 1W
R102	24366123	CF, 12k ohm
R151	24366562	CF, 5600 ohm
R152	24366103	CF, 10k ohm
R201	24366102	CF, 1k ohm
R202	24366102	CF, 1k ohm
R203	24366474	CF, 470k ohm
R205	24366101	CF, 100 ohm
R206	24366102	CF, 1k ohm
R207	24366101	CF, 100 ohm
R208	24366101	CF, 100 ohm
R209	24366101	CF, 100 ohm
R216	24366223	CF, 22k ohm
R223	24366102	CF, 1k ohm
R228	24366473	CF, 47k ohm
R238	24366473	CF, 47k ohm
R239	24366274	CF, 270k ohm
R240	24366562	CF, 5600 ohm
R241	24366682	CF, 6800 ohm
R245	24366104	CF, 100k ohm
R261	24366472	CF, 4700 ohm
R262	24366102	CF, 1k ohm
R263	24366472	CF, 4700 ohm
R264	24366102	CF, 1k ohm
R265	24366472	CF, 4700 ohm
R266	24366102	CF, 1k ohm
R271	24366101	CF, 100 ohm
R272	24366222	CF, 2200 ohm
R275	24366103	CF, 10k ohm
R301	24366102	CF, 1k ohm

Location No.	Part No.	Description
R303	24321109	MF, 1 ohm, 1/2W
R304	24366393	CF, 39k ohm (32AX60)
R304	24366623	CF, 62k ohm (36AX60)
R305	24322688	MF, 0.68 ohm, 1W (32AX60)
R305	24322828	MF, 0.82 ohm, 1W (36AX60)
R306	24366563	CF, 56k ohm (32AX60)
R306	24366683	CF, 68k ohm (36AX60)
R307	24366474	CF, 470k ohm (32AX60)
R307	24366684	CF, 680k ohm (36AX60)
R308	24383391	OMF, 390 ohm, 2W (32AX60)
R308	24383821	OMF, 820 ohm, 2W (36AX60)
R309	24553181	OMF, 180 ohm, 1W (32AX60)
R309	24553271	OMF, 270 ohm, 1W (36AX60)
R310	24366153	CF, 15k ohm
R311	24366392	CF, 3900 ohm
R313	24366104	CF, 100k ohm
R314	24366105	CF, 1M ohm
R315	24366824	CF, 820k ohm
R317	24366102	CF, 1k ohm
R327	24339569	MF, 5.6 ohm, 2W (32AX60)
R327	24339479	MF, 4.7 ohm, 2W (36AX60)
R328	24366824	CF, 820k ohm (32AX60)
R328	24366684	CF, 680k ohm (36AX60)
R336	24383221	OMF, 220 ohm, 2W
R360	24366104	CF, 100k ohm
R361	24366473	CF, 47k ohm
R363	24366105	CF, 1M ohm (36AX60)
R364	24366103	CF, 10k ohm (36AX60)
R368	24545479	FR, 4.7 ohm, 1/4W
R369	24366391	CF, 390 ohm
R401	24366391	CF, 390 ohm
R403	24366622	CF, 6200 ohm
R405	24382682	OMF, 6800 ohm, 1W
R406	24366104	CF, 100k ohm
R407	24366103	CF, 10k ohm
R408	24366472	CF, 4700 ohm
R410	24366271	CF, 270 ohm
R411	24366561	CF, 560 ohm
R415	24553272	OMF, 2700 ohm, 1W
R416	24510432	Cement, 4300 ohm, 5W
R418	24383181	OMF, 180 ohm, 2W
R424	24546828	FR, 0.82 ohm, 1/2W
R425	24366561	CF, 560 ohm
R430	24366102	CF, 1k ohm
R431	24366103	CF, 10k ohm
R432	24366202	CF, 2k ohm
R433	24366102	CF, 1k ohm
R441	24532102	FR, 1k ohm, 1W
R448	24338478	MF, 0.47 ohm, 1W
R456	24366103	CF, 10k ohm
R457	24366104	CF, 100k ohm
R460	24366333	CF, 33k ohm
R461	24366393	CF, 39k ohm
R462	24366561	CF, 560 ohm
R463	24322479	MF, 4.7 ohm, 1W
R464	24366102	CF, 1k ohm
R465	24366682	CF, 6800 ohm
R466	24366103	CF, 10k ohm
R472	24382270	OMF, 27 ohm, 1W
R473	24366473	CF, 47k ohm
R474	24366184	CF, 180k ohm
⚠R475	24366391	CF, 390 ohm
R476	24366823	CF, 82k ohm
R477	24366273	CF, 27k ohm
⚠R478	24327133	MF, 13k ohm, ±1%, 1/4W
R481	24366333	CF, 33k ohm
⚠R482	24327472	MF, 4700 ohm, ±1%, 1/4W
R485	24338568	MF, 0.56 ohm, 1W
R486	24552820	OMF, 82 ohm, 1/2W
R487	24552301	OMF, 300 ohm, 1/2W
R488	24327183	MF, 18k ohm, ±1%, 1/4W
R489	24327183	MF, 18k ohm, ±1%, 1/4W
R490	24366102	CF, 1k ohm
R493	24366102	CF, 1k ohm
R494	24366471	CF, 470 ohm
R495	24366560	CF, 56 ohm
R501	24366333	CF, 33k ohm
R502	24366101	CF, 100 ohm
R503	24366101	CF, 100 ohm
R511	24366102	CF, 1k ohm
R512	24366102	CF, 1k ohm
R612	24366103	CF, 10k ohm
R613	24366222	CF, 2200 ohm
R614	24366102	CF, 1k ohm
R661	24366182	CF, 1800 ohm
R662	24366182	CF, 1800 ohm
R663	24366103	CF, 10k ohm
R664	24366103	CF, 10k ohm
R667	24366223	CF, 22k ohm
R668	24366103	CF, 10k ohm
R669	24366103	CF, 10k ohm
R674	24366153	CF, 15k ohm
R676	24366229	CF, 2.2 ohm
R677	24366229	CF, 2.2 ohm
R678	24366153	CF, 15k ohm
R702	24366122	CF, 1200 ohm
R709	24366563	CF, 56k ohm
R710	24366101	CF, 100 ohm
R713	24366393	CF, 39k ohm
R715	24366563	CF, 56k ohm
R716	24366273	CF, 27k ohm
R717	24366333	CF, 33k ohm
R720	24366392	CF, 3900 ohm
R722	24366102	CF, 1k ohm
R723	24366471	CF, 470 ohm
R724	24366331	CF, 330 ohm
R725	24366182	CF, 1800 ohm
R730	24552100	OMF, 10 ohm, 1/2W
R731	24552331	OMF, 330 ohm, 1/2W
R732	24366820	CF, 82 ohm
R733	24366683	CF, 68k ohm
R734	24366820	CF, 82 ohm
R735	24366683	CF, 68k ohm
R736	24552620	OMF, 62 ohm, 1/2W
R737	24366152	CF, 1500 ohm
R738	24366123	CF, 12k ohm
R739	24366152	CF, 1500 ohm
R740	24552620	OMF, 62 ohm, 1/2W
R741	24366279	CF, 2.7 ohm
R742	24366279	CF, 2.7 ohm
R743	24554221	OMF, 220 ohm, 2W
R744	24366122	CF, 1200 ohm
R745	24366122	CF, 1200 ohm
R808	24000862	PTC Thermistor, 7 ohm, ±20%, 140V
R810	24569828	Cement, 0.82 ohm, ±10%, 10W
R814	24366103	CF, 10k ohm

Location No.	Part No.	Description
R815	24552332	OMF, 3300 ohm, 1/2W
R818	24323479	MF, 4.7 ohm, 2W
R820	24322208	MF, 0.2 ohm, 1W
R821	24552470	OMF, 47 ohm, 1/2W
R823	24366152	CF, 1500 ohm
R829	24004945	MF, 0.18 ohm, 1W
R830	24548569	FR, 5.6 ohm, 2W
R831	24366561	CF, 560 ohm
R835	24552681	OMF, 680 ohm, 1/2W
R861	24553153	OMF, 15k ohm, 1W
R883	24366471	CF, 470 ohm
R884	24366471	CF, 470 ohm
R888	24321228	MF, 0.22 ohm, 1/2W
R891	24366102	CF, 1k ohm
R898	24002000	CC, 3.9M ohm, ±10%, 1/2W
R901	24552102	OMF, 1k ohm, 1/2W
R902	24552102	OMF, 1k ohm, 1/2W
R903	24552102	OMF, 1k ohm, 1/2W
R904	24366103	CF, 10k ohm
R905	24366101	CF, 100 ohm
R911	24366150	CF, 15 ohm
R914	24366561	CF, 560 ohm
R915	24366301	CF, 300 ohm (32AX60)
R915	24366181	CF, 180 ohm (36AX60)
R917	24366102	CF, 1k ohm
R918	24366820	CF, 82 ohm
R920	24000880	FR, 5.1 ohm, 1W (32AX60)
R920	24000961	FR, 2.2 ohm, 2W (36AX60)
R921	24366561	CF, 560 ohm
R922	24366301	CF, 300 ohm (32AX60)
R922	24366181	CF, 180 ohm (36AX60)
R924	24366820	CF, 82 ohm
R925	24366102	CF, 1k ohm
R928	24366561	CF, 560 ohm
R929	24366301	CF, 300 ohm (32AX60)
R929	24366181	CF, 180 ohm (36AX60)
R930	24366820	CF, 82 ohm
R932	24366272	CF, 2700 ohm
R934	24366391	CF, 390 ohm
R935	24366821	CF, 820 ohm
R936	24366750	CF, 75 ohm
R937	24366102	CF, 1k ohm
R939	24366101	CF, 100 ohm
R942	24366562	CF, 5600 ohm
R943	24366562	CF, 5600 ohm
R944	24366562	CF, 5600 ohm
R960	24383153	OMF, 15k ohm, 2W
R961	24383153	OMF, 15k ohm, 2W
R962	24383153	OMF, 15k ohm, 2W
R963	24366154	CF, 150k ohm
R964	24552102	OMF, 1k ohm, 1/2W
R965	24366101	CF, 100 ohm
R966	24366471	CF, 470 ohm
R967	24552121	OMF, 120 ohm, 1/2W
R977	24366122	CF, 1200 ohm
R980	24366471	CF, 470 ohm
R981	24366821	CF, 820 ohm
R982	24366103	CF, 10k ohm
R983	24366222	CF, 2200 ohm
R984	24367152	CF, 1500 ohm, ±2%
R985	24367471	CF, 470 ohm, ±2%
R986	24367681	CF, 680 ohm, ±2%
R987	24367681	CF, 680 ohm, ±2%
R988	24367472	CF, 4700 ohm, ±2%
R989	24367472	CF, 4700 ohm, ±2%
R990	24366222	CF, 2200 ohm
R991	24367681	CF, 680 ohm, ±2%
RA02	24366102	CF, 1k ohm
RA03	24366102	CF, 1k ohm
RA04	24366102	CF, 1k ohm
RA05	24366102	CF, 1k ohm
RA06	24366102	CF, 1k ohm
RA07	24366102	CF, 1k ohm
RA08	24366102	CF, 1k ohm
RA09	24366102	CF, 1k ohm
RA10	24366103	CF, 10k ohm
RA13	24366103	CF, 10k ohm
RA14	24366102	CF, 1k ohm
RA15	24366102	CF, 1k ohm
RA16	24366102	CF, 1k ohm
RA17	24366102	CF, 1k ohm
RA18	24366102	CF, 1k ohm
RA21	24366102	CF, 1k ohm
RA22	24366331	CF, 330 ohm
RA23	24366331	CF, 330 ohm
RA24	24366331	CF, 330 ohm
RA25	24366331	CF, 330 ohm
RA26	24366102	CF, 1k ohm
RA27	24366102	CF, 1k ohm
RA33	24366103	CF, 10k ohm
RA34	24366102	CF, 1k ohm
RA35	24366102	CF, 1k ohm
RA36	24366103	CF, 10k ohm
RA37	24366331	CF, 330 ohm
RA38	24366331	CF, 330 ohm
RA40	24366101	CF, 100 ohm
RA41	24366101	CF, 100 ohm
RA61	24366103	CF, 10k ohm
RA62	24366103	CF, 10k ohm
RA67	24366472	CF, 4700 ohm
RA68	24366472	CF, 4700 ohm
RA71	24366683	CF, 68k ohm
RA72	24366223	CF, 22k ohm
RA73	24366103	CF, 10k ohm
RA74	24366333	CF, 33k ohm
RA99	24366223	CF, 22k ohm
RB01	24366271	CF, 270 ohm
RB03	24366101	CF, 100 ohm
RB09	24366470	CF, 47 ohm
RB11	24366103	CF, 10k ohm
RB21	24366472	CF, 4700 ohm
RB22	24366122	CF, 1200 ohm
RB23	24366222	CF, 2200 ohm
RB24	24366472	CF, 4700 ohm
RB25	24366472	CF, 4700 ohm
RB30	24366103	CF, 10k ohm
RB40	24366103	CF, 10k ohm
RB41	24366152	CF, 1500 ohm
RB42	24366102	CF, 1k ohm
RB43	24366103	CF, 10k ohm
RB44	24366103	CF, 10k ohm
RB45	24366181	CF, 180 ohm
RB46	24366101	CF, 100 ohm
RB47	24366332	CF, 3300 ohm
RB48	24366473	CF, 47k ohm
RB49	24366332	CF, 3300 ohm
RB60	24366301	CF, 300 ohm
RB61	24366244	CF, 240k ohm

Location No.	Part No.	Description
RB62	24366133	CF, 13k ohm
RB63	24366392	CF, 3900 ohm
RB64	24366103	CF, 10k ohm
RB65	24366103	CF, 10k ohm
RD80	24366102	CF, 1k ohm
RD81	24366152	CF, 1500 ohm
RD82	24366103	CF, 10k ohm
RD83	24366102	CF, 1k ohm
RD85	24366103	CF, 10k ohm
RG02	24366101	CF, 100 ohm
RG03	24366101	CF, 100 ohm
RG60	24366182	CF, 1800 ohm
RG61	24366182	CF, 1800 ohm
RG62	24366473	CF, 47k ohm
RG63	24366821	CF, 820 ohm
RG64	24366222	CF, 2200 ohm
RG66	24366562	CF, 5600 ohm
RG67	24366822	CF, 8200 ohm
RG68	24366102	CF, 1k ohm
RG69	24366564	CF, 560k ohm
RG70	24366102	CF, 1k ohm
RG71	24366473	CF, 47k ohm
RG72	24366222	CF, 2200 ohm
RM25	24366223	CF, 22k ohm
RM33	24366103	CF, 10k ohm
RM35	24366102	CF, 1k ohm
RM36	24366102	CF, 1k ohm
RM37	24366101	CF, 100 ohm
RM38	24366101	CF, 100 ohm
RM40	24366101	CF, 100 ohm
RM41	24366101	CF, 100 ohm
RM57	24366223	CF, 22k ohm
RM70	24366153	CF, 15k ohm
RM71	24366153	CF, 15k ohm
RM72	24366332	CF, 3300 ohm
RM73	24366332	CF, 3300 ohm
RR01	24366102	CF, 1k ohm
RR02	24366472	CF, 4700 ohm
RR03	24366102	CF, 1k ohm
RR04	24366472	CF, 4700 ohm
RR05	24366102	CF, 1k ohm
RR06	24366472	CF, 4700 ohm
RR07	24366681	CF, 680 ohm
RR08	24366682	CF, 6800 ohm
RR93	24366472	CF, 4700 ohm
RS02	24366682	CF, 6800 ohm
RS04	24366682	CF, 6800 ohm
RS08	24366682	CF, 6800 ohm
RS10	24366682	CF, 6800 ohm
RS14	24366682	CF, 6800 ohm
RS16	24366682	CF, 6800 ohm
RS25	24366682	CF, 6800 ohm
RS26	24366682	CF, 6800 ohm
RS28	24366472	CF, 4700 ohm
RS40	24366101	CF, 100 ohm
RS42	24366101	CF, 100 ohm
RS60	24366101	CF, 100 ohm
RS61	24366222	CF, 2200 ohm
RS62	24366101	CF, 100 ohm
RS63	24366222	CF, 2200 ohm
RS64	24366102	CF, 1k ohm
RS65	24366102	CF, 1k ohm
RS66	24366102	CF, 1k ohm
RS68	24366223	CF, 22k ohm

Location No.	Part No.	Description
RS69	24366223	CF, 22k ohm
RS70	24366104	CF, 100k ohm
RS71	24366104	CF, 100k ohm
RV01	24366750	CF, 75 ohm
RV02	24366750	CF, 75 ohm
RV03	24366750	CF, 75 ohm
RV04	24366750	CF, 75 ohm
RV05	24366750	CF, 75 ohm
RV07	24366103	CF, 10k ohm
RV08	24366102	CF, 1k ohm
RV17	24366101	CF, 100 ohm
RV18	24366681	CF, 680 ohm
RV19	24366101	CF, 100 ohm
RV20	24366101	CF, 100 ohm
RV60	24552101	OMF, 100 ohm, 1/2W
RV61	24366101	CF, 100 ohm
RV62	24366750	CF, 75 ohm
RV63	24366221	CF, 220 ohm
RW01	24366750	CF, 75 ohm
RW02	24366750	CF, 75 ohm
RW03	24366750	CF, 75 ohm
RZ01	24872102	Chip, 1k ohm, 1/16W
RZ02	24872102	Chip, 1k ohm, 1/16W
RZ03	24872332	Chip, 3300 ohm, 1/16W
RZ04	24872122	Chip, 1200 ohm, 1/16W
RZ05	24872471	Chip, 470 ohm, 1/16W
RZ06	24872821	Chip, 820 ohm, 1/16W
RZ08	24872122	Chip, 1200 ohm, 1/16W
RZ09	24872101	Chip, 100 ohm, 1/16W
RZ10	24872471	Chip, 470 ohm, 1/16W
RZ12	24872332	Chip, 3300 ohm, 1/16W
RZ13	24872122	Chip, 1200 ohm, 1/16W
RZ14	24872821	Chip, 820 ohm, 1/16W
RZ15	24872821	Chip, 820 ohm, 1/16W
RZ17	24872471	Chip, 470 ohm, 1/16W
RZ18	24872122	Chip, 1200 ohm, 1/16W
RZ19	24872332	Chip, 3300 ohm, 1/16W
RZ20	24872101	Chip, 100 ohm, 1/16W
RZ22	24872471	Chip, 470 ohm, 1/16W
RZ29	24872331	Chip, 330 ohm, 1/16W
RZ30	24872331	Chip, 330 ohm, 1/16W

COILS & TRANSFORMERS

L101	23289220	Coil, Peaking, TRF4220AF
L111	23289220	Coil, Peaking, TRF4220AF
L113	23289220	Coil, Peaking, TRF4220AF
L121	23238562	Coil, Peaking, TRF4109AJ
L122	23238562	Coil, Peaking, TRF4109AJ
L301	23103880	Coil (Ferrite Bead), TEM2011Y
L400	23238714	Coil, Peaking, TRF4100AJ
⚠L441	23233941	Coil, Linearity, TLN2157G (32AX60)
⚠L441	23233979	Coli, Linearity, TLN2206AG (36AX60)
L442	23248122	Coil, Choke, TLN3384D (32AX60)
L442	23248121	Coil, Choke, TLN3383D (36AX60)
⚠L461	23248115	Coil, Choke, TLN3367D (32AX60)
⚠L461	23248179	Coil, Choke, TLN3339AD (36AX60)
L501	23289844	Coil, Peaking, TRF4470AT
L702	23261974	Coil, Choke, HC5-035

Location No.	Part No.	Description
L704	23103859	Coil (Ferrite Bead), TEM2011
L705	23103859	Coil (Ferrite Bead), TEM2011
L805	23248227	Coil, Choke, TLN3481AD
L806	23248227	Coil, Choke, TLN3481AD
L815	23103880	Coil (Ferrite Bead), TEM2011Y
L883	23103880	Coil (Ferrite Bead), TEM2011Y
L885	23248073	Coil, Choke, TLN3299D
L886	23103880	Coil (Ferrite Bead), TEM2011Y
L901	23200631	Coil, Degaussing, TSB-2304AT (32AX60)
L901	23200335	Coil, Degaussing, TSB-2362CP (36AX60)
L902	23289221	Coil, Peaking, TRF4221AF
L903	23289221	Coil, Peaking, TRF4221AF
L904	23289221	Coil, Peaking, TRF4221AF
L910	23237991	Coil, Peaking, TRF4479AC
LA01	23289100	Coil, Peaking, TRF4100AF
LM02	23289840	Coil, Peaking, TRF4100AT
LV01	23289840	Coil, Peaking, TRF4100AT
LV02	23103852	Coil, Filter, TEM2028AH
LV45	23289840	Coil, Peaking, TRF4100AT
LV98	23103852	Coil, Filter, TEM2028AH
LV99	23103852	Coil, Filter, TEM2028AH
LZ01	23238710	Coil, Peaking, TRF4220AJ
LZ02	23238714	Coil, Peaking, TRF4100AJ
LZ03	23238714	Coil, Peaking, TRF4100AJ
LZ04	23238714	Coil, Peaking, TRF4100AJ
LZ05	23238714	Coil, Peaking, TRF4100AJ
LZ08	23238707	Coil, Peaking, TRF4390AJ
LZ11	23238710	Coil, Peaking, TRF4220AJ
LZ12	23238710	Coil, Peaking, TRF4220AJ
T401	23224367	Transformer, Horiz. Drive, TLN1098AH
⚠T461	23236540	Transformer, Flyback, TFB4132ED
T801	23211708	Line Filter, TRF3223AK
T840	23213513	Transformer, Power, TPW1459AZ
T862	23217460	Transformer, Converter, TPW3445AE

SEMICONDUCTORS

Location No.	Part No.	Description
Q151	23114530	Transistor, 2SA933S-Q
Q152	23114528	Transistor, 2SC1740S, Q
Q201	23114528	Transistor, 2SC1740S, Q
Q202	23114528	Transistor, 2SC1740S, Q
Q203	23114528	Transistor, 2SC1740S, Q
Q204	A6002040	Transistor, RN1204
Q205	A6002040	Transistor, RN1204
Q301	B0378560	IC, TA8427K
Q301B	72471082	Screw, BRDT2W3X10 SZN
Q360	23114528	Transistor, 2SC1740S, Q (36AX60)
Q361	23314445	Transistor, 2SC4721, Q
Q402	A6330069	Transistor, 2CS2482 FA-1
Q403	23314444	Transistor, 2SC4721P
Q404	A6873777	Transistor, 2SD2553
Q404B	72471082	Screw, BRDT2W3X10 SZN
Q421	23314141	Transistor, 2SC3852
Q421B	23035308	Screw, BTB3X8SZN
Q460	23314938	Transistor, 2SD2493(P)
Q460B	72471082	Screw, BRDT2W3X10 SZN
Q461	23114530	Transistor, 2SA933S-Q
Q471	A6534020	Transistor, 2SA1015-O
Q472	23114528	Transistor, 2SC1740S, Q
Q480	A6532853	Transistor, 2SA949-Y(C)
Q481	23114528	Transistor, 2SC1740S, Q
Q482	23114528	Transistor, 2SC1740S, Q
Q483	A6012010	Transistor, RN2201
Q610	B01A0068	IC, TA8265K
Q610B	70391356	Screw, BITTB3X10 SZN
Q611	A6342200	Transistor, 2CS2878-A
Q612	23314962	Transistor, KTA1266 Y
Q613	A6342200	Transistor, 2CS2878-A
Q706	23114528	Transistor, 2SC1740S, Q
Q707	23114528	Transistor, 2SC1740S, Q
Q709	23114528	Transistor, 2SC1740S, Q
Q710	23114530	Transistor, 2SA933S-Q
Q711	23314701	Transistor, 2SB1186A, E
Q712	23314705	Transistor, 2SD1763A, VE
Q719	23114528	Transistor, 2SC1740S, Q
Q720	23114528	Transistor, 2SC1740S, Q
Q801	23135012	IC, STR-G6624
Q801B	72471082	Screw, BRDT2W3X10 SZN
Q830	23314141	Transistor, 2SC3852
Q830B	23035308	Screw, BTB3X8SZN
Q840	23318299	IC, L78MR05
Q843	A6002050	Transistor, RN1205
Q862	A8643135	Photo Coupler, TLP621(GRL)
⚠Q883	A6907894	IC, S1854A(FA4)
Q901	A6368700	Transistor, 2CS4544
Q902	A6317440	Transistor, 2SC1815-Y
Q903	A6368700	Transistor, 2CS4544
Q904	A6317440	Transistor, 2SC1815-Y
Q905	A6368700	Transistor, 2CS4544
Q906	A6317440	Transistor, 2SC1815-Y
Q907	23114530	Transistor, 2SA933S-Q
Q908	A6321240	Transistor, 2SC2120-Y
Q910	23114528	Transistor, 2SC1740S, Q
Q911	23114528	Transistor, 2SC1740S, Q
Q912	23114530	Transistor, 2SA933S-Q
Q913	23114530	Transistor, 2SA933S-Q
Q914	23114528	Transistor, 2SC1740S, Q
Q960	A6002040	Transistor, RN1204
Q961	A6012020	Transistor, RN2202
Q962	23114528	Transistor, 2SC1740S, Q
QA01	23000407	IC, TMP88CS38N-1B18
QA02	23905665	IC, AT24C08-10PC
QB01	23114528	Transistor, 2SC1740S, Q
QB03	A6002050	Transistor, RN1205
QB22	A6734590	Transistor, 2SC752(G)TM-Y
QB23	23114528	Transistor, 2SC1740S, Q
QB30	23114528	Transistor, 2SC1740S, Q
QB40	23114528	Transistor, 2SC1740S, Q
QB41	23114528	Transistor, 2SC1740S, Q
QB60	23114530	Transistor, 2SA933S-Q
QB61	23114528	Transistor, 2SC1740S, Q
QD80	23114530	Transistor, 2SA933S-Q
QG60	23906596	IC, BA4558
QG61	23119228	IC, μPC1406HA
QM02	23114530	Transistor, 2SA933S-Q
QM03	70119743	IC, PST523D
QS60	23314965	Transistor, KTC3198 Y
QS61	23314965	Transistor, KTC3198 Y
QS62	A6012040	Transistor, RN2204
QS63	A6342200	Transistor, 2CS2878-A
QS64	A6342200	Transistor, 2CS2878-A
QV01	23906364	IC, MM1313BD

Location No.	Part No.	Description
QV02	23904943	IC, MM1111XS
QV14	23114530	Transistor, 2SA933S-Q
QV60	23114528	Transistor, 2SC1740S, Q
QZ01	B0410895	IC, TC90A49P
QZ02	A6541130	Transistor, 2SA1162-Y
QZ03	A6541130	Transistor, 2SA1162-Y
QZ04	A6541130	Transistor, 2SA1162-Y
QZ05	A6335470	Transistor, 2SC2712-Y
QZ06	A6541130	Transistor, 2SA1162-Y
QZ07	A6541130	Transistor, 2SA1162-Y
QZ08	A6335470	Transistor, 2SC2712-Y
D101	23316411	Diode, Zener, HZT33-12
D201	23118859	Diode, 1SS133
D221	23118859	Diode, 1SS133
D222	23118859	Diode, 1SS133
D223	23118859	Diode, 1SS133
D224	23118859	Diode, 1SS133
D252	23316686	Diode, Zener, MTZJ9.1A
D253	23316686	Diode, Zener, MTZJ9.1A
D301	23118095	Diode, ERB44-06, E
D302	23118095	Diode, ERB44-06, E
D308	23118822	Diode, ERB12-02
D309	23118822	Diode, ERB12-02
D310	23118859	Diode, 1SS133
D313	23118859	Diode, 1SS133
D314	23118859	Diode, 1SS133 (36AX60)
D315	23118859	Diode, 1SS133 (36AX60)
D316	23316673	Diode, Zener, MTZJ5.6C (32AX60)
D316	23316679	Diode, Zener, MTZJ6.8C (36AX60)
D406	23118094	Diode, EU2A, LF-F10
D408	A7580658	Diode, 3JH41
D409	23316690	Diode, Zener, MTZJ10B
D411	23316684	Diode, Zener, MTZJ8.2B
D421	23316665	Diode, Zener, MTZJ4.7A
D422	23316669	Diode, Zener, MTZJ5.1B
D430	23316720	Diode, Zener, MTZJ12C
D441	23316687	Diode, Zener, MTZJ9.1B T77
D461	23316582	Diode, ERC20-06
D461B	70391356	Screw, BITTB3X10 SZN
D464	23316648	Diode, Zener, MTZJ2.2A
D466	23316653	Diode, Zener, MTZJ2.7B (36AX60)
D467	23118095	Diode, ERB44-06, E
D471	23118095	Diode, ERB44-06, E
⚠D472	23115774	Diode, Zener, RD6.2E(4)
D473	23118859	Diode, 1SS133
D480	23316727	Diode, Zener, MTZJ16A
D611	23118859	Diode, 1SS133
D612	23118859	Diode, 1SS133
D704	23118859	Diode, 1SS133
D705	23118859	Diode, 1SS133
D715	23118859	Diode, 1SS133
D720	23118859	Diode, 1SS133
D721	23118859	Diode, 1SS133
D801	23316391	Diode, D3SB60, 4109
D805	23118859	Diode, 1SS133
D806	23118094	Diode, EU2A
D807	23118859	Diode, 1SS133
D810	23316269	Diode, AK04
D815	23316746	Diode, Zener, MTZJ27B
D830	23316673	Diode, Zener, MTZJ5.6C
D840	23316962	Diode, S1WBA20 4101

Location No.	Part No.	Description
D845	23118859	Diode, 1SS133
D881	23118859	Diode, 1SS133
D883	23118338	Diode, RU-4AM LF-L1
⚠D884	23316721	Diode, Zener, MTZJ13A
D885	23118052	Diode, RU4Z LF-L1
D899	24019471	Varistor, TNR10V271K2
D901	23118859	Diode, 1SS133
D902	23118859	Diode, 1SS133
D903	23118859	Diode, 1SS133
D904	23118859	Diode, 1SS133
D905	23118859	Diode, 1SS133
D906	23118859	Diode, 1SS133
D911	A7568250	Diode, 1S1834
D960	23316731	Diode, Zener, MTZJ18B
D961	23118859	Diode, 1SS133
D962	23118859	Diode, 1SS133
D963	23118859	Diode, 1SS133
D964	23118859	Diode, 1SS133
D965	23118859	Diode, 1SS133
D966	23118859	Diode, 1SS133
DA42	23118529	Diode, Zener, RD5.6ESA B2
DB03	23358522	Diode (LED), SIR-56SB3F
DB30	23118859	Diode, 1SS133
DB45	23118859	Diode, 1SS133
DE50	23358501	Diode (LED), SCL003URC5F
DM01	23316675	Diode, Zener, MTZJ6.2B T77
DV01	23316686	Diode, Zener, MTZJ9.1A
DV03	23316686	Diode, Zener, MTZJ9.1A
DV05	23316686	Diode, Zener, MTZJ9.1A
DV13	23316686	Diode, Zener, MTZJ9.1A
DV27	23316686	Diode, Zener, MTZJ9.1A
DV45	23316686	Diode, Zener, MTZJ9.1A

MISCELLANEOUS

Location No.	Part No.	Description
B110	23470538	Back Termial Board
B230	23037310	Screw, BTBW 3X10 SZN
B231	23035412	Screw, BTB 4X12 SZN
B232	23035312	Screw, BTB 3X12 SZN
BB01	23903022	Socket, 8P
BB02	23903022	Socket, 8P
BB03	23903022	Socket, 8P
BB11	23903022	Socket, 8P
BB22	23903022	Socket, 8P
BB33	23903022	Socket, 8P
BB111	23368627	Plug, 8P
BB222	23368627	Plug, 8P
BB333	23368627	Plug, 8P
F301	23144908	Fuse, 0.5A, 125V
F301A	23165433	Holder, Fuse
F470	23144785	Fuse, 1.25A, 125V
F470A	23165433	Holder, Fuse
F801	23144888	Fuse, 5.0A, 125V
F801A	23165433	Holder, Fuse
F802	23144511	Fuse, 4.0A, 125V
G060	24366470	CF, 47 ohm
G104	23289470	Coil, Peaking, TRF4470AF
G105	24366221	CF, 220 ohm
G106	24366221	CF, 220 ohm
G217	24366333	CF, 33k ohm
G317	23118859	Diode, 1SS133 (36AX60)
G405	24214472	CD, 4700pF, ±10%, 500V
G463	23103880	Coil (Ferrite Bead), TEM2011Y
G500	23289840	Coil, Peaking, TRF4100AT
G714	24552121	OMF, 120 ohm, 1/2W

Location No.	Part No.	Description
G719	24366392	CF, 3900 ohm
G816	23103880	Coil (Ferrite Bead), TEM2011Y
G890	23280016	Coil, Peaking, TRF4100AZ
G891	23280016	Coil, Peaking, TRF4100AZ
G908	23289100	Coil, Peaking, TRF4100AF
G916	24366101	CF, 100 ohm (36AX60)
G933	24366750	CF, 75 ohm
G945	24366101	CF, 100 ohm (36AX60)
G946	24366101	CF, 100 ohm (36AX60)
H002	23148271	Module, MVUS33A, US IMA
H003	23344420	RF Switch, RSU133X5
H003A	23740989	Nut, F-Connector
HY01	23321379	Tuner, EL955LX1
KB01	23906805	Remote Sensor, PIC-TB17
M461A	23192944	Anode Cap, TCCP5161 (32AX60)
M461A	23192945	Anode Cap, TCCP5162 (36AX60)
P801	23372112	Power Cord
P900	23164724	Plug, 3P (36AX60)
P910	23164725	Plug, 2P
PV01	23365818	Jack, SVHS
PV02	23365948	Jack, 9P
PV03	23365949	Jack, 5P
PV04	23365763	Jack, Phono, 3P
PZ01	23368130	Plug, 10P
PZ01A	23902213	Socket, B-B, 10P
SA01	23145227	Switch, Push, 1C1P
SA02	23145227	Switch, Push, 1C1P
SA03	23145227	Switch, Push, 1C1P
SA04	23145227	Switch, Push, 1C1P
SA05	23145227	Switch, Push, 1C1P
SA06	23145227	Switch, Push, 1C1P
SA07	23145227	Switch, Push, 1C1P
SR81	23146564	Relay, DC12V
SR81A	23960136	Adhesive, TSE3843-W
V901A	23902068	Socket, CRT, 10P
W661	23351088	Speaker, SPK-1360, 60X120mm, 8 ohm
W662	23351088	Speaker, SPK-1360, 60X120mm, 8 ohm
X401	23153721	Ceramic Resonator, 503kHz, TCR1023
X501	23153961	Crystal, 3.58MHz
XA01	23153504	Ceramic Resonator, 8.00MHz, TCR1056BM
XM01	23153325	Ceramic Resonator, 8.00MHz, TCR1056
ZT01	70108925	Resonator, 4MHz, TCR1071
ZY01	23148731	Module, MKMP33, MULTI PICTURE PNT

PC BOARD ASSEMBLIES

Location No.	Part No.	Description
*U901		CRT Drive Board, PB7347C (32AX60)
*U901		CRT Drive Board, PB7347D (36AX60)
*U902		Main Board, PB9361D (32AX60)
*U902		Main Board, PB9361E (36AX60)
*U903		V-CHIP Board, PB8688B
*U905		DIG COM Board, PB9398
*U910		TIF Board, PB9362B

PICTURE TUBE

Location No.	Part No.	Description
⚠V901	23312690	Picture Tube, A81AGZ50X01V (32AX60)
⚠V901	23312713	Picture Tube, A90AHH50X02V (36AX60)

TUNER

Location No.	Part No.	Description
H001	23321378	Tuner, ELA52LX1

ACCESSORIES

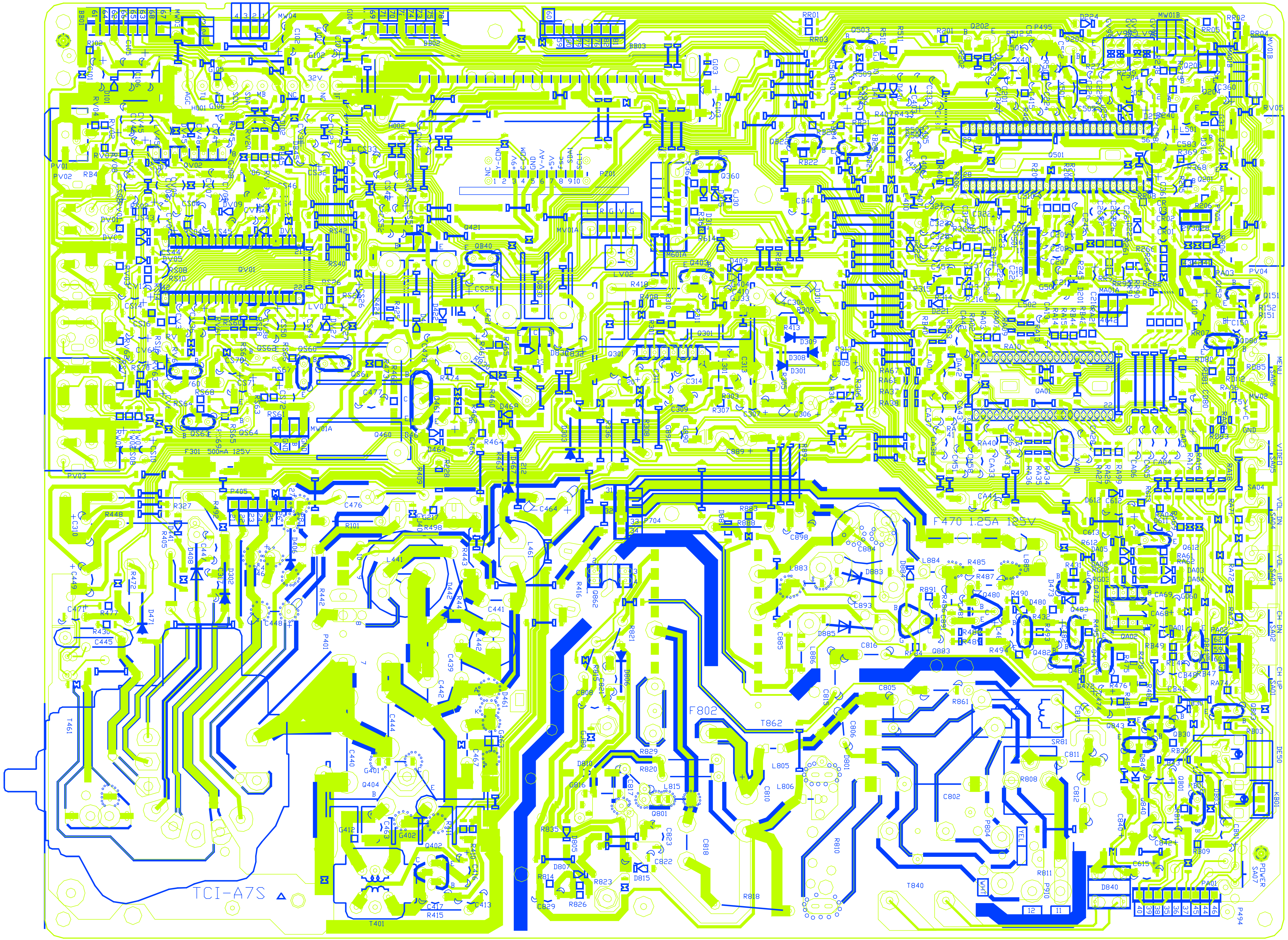
Location No.	Part No.	Description
K912	23306263	Remote Hand Unit, CT-9946
AT03	23588181	Battery Cover
Y101	23563919	Owner's Manual, English, 32AX60/36AX60
Y101F	23563920	Owner's Manual, French, 32AX60/36AX60

CABINET PARTS

Location No.	Part No.	Description
A201	23540101	Front Cover (32AX60)
A201	23540119	Front Cover (36AX60)
A411	23549930	Back Cover (32AX60)
A431	23427321	Back Cover (36AX60)
A701	23525304	Carton Box (32AX60)
A701	23064058	Case (36AX60)
A703	23946024	Packing, Top (32AX60)
A703	23935769	Packing, Top (36AX60)
A708	23946025	Packing, Bottom (32AX60)
A708	23935954	Packing, Bottom (36AX60)

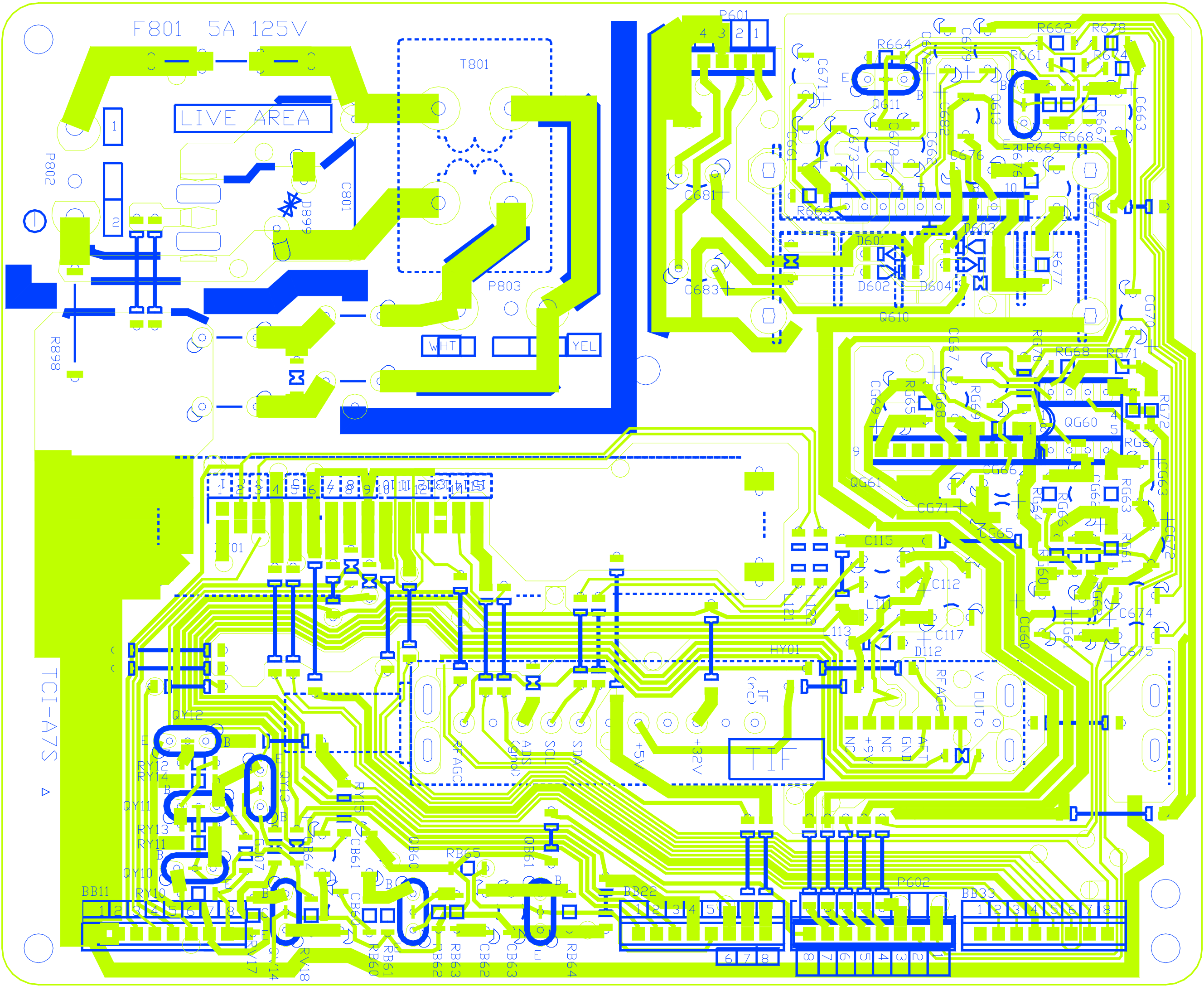
MAIN BOARD PB9361

BOTTOM (FOIL) SIDE



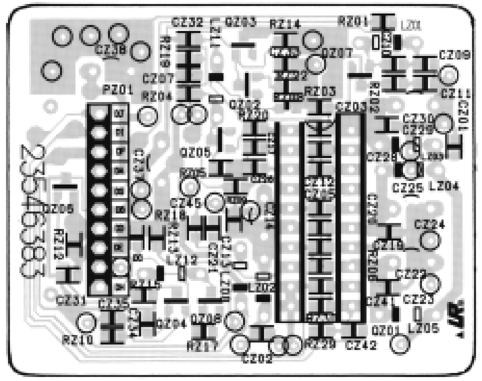
PIP/TIF DRIVE BOARD PB9362B

BOTTOM (FOIL) SIDE


F801 5A 125V
LIVE AREA
T801
P803
WHT
YEL
TCI-A7S
TIF
HY01
P602

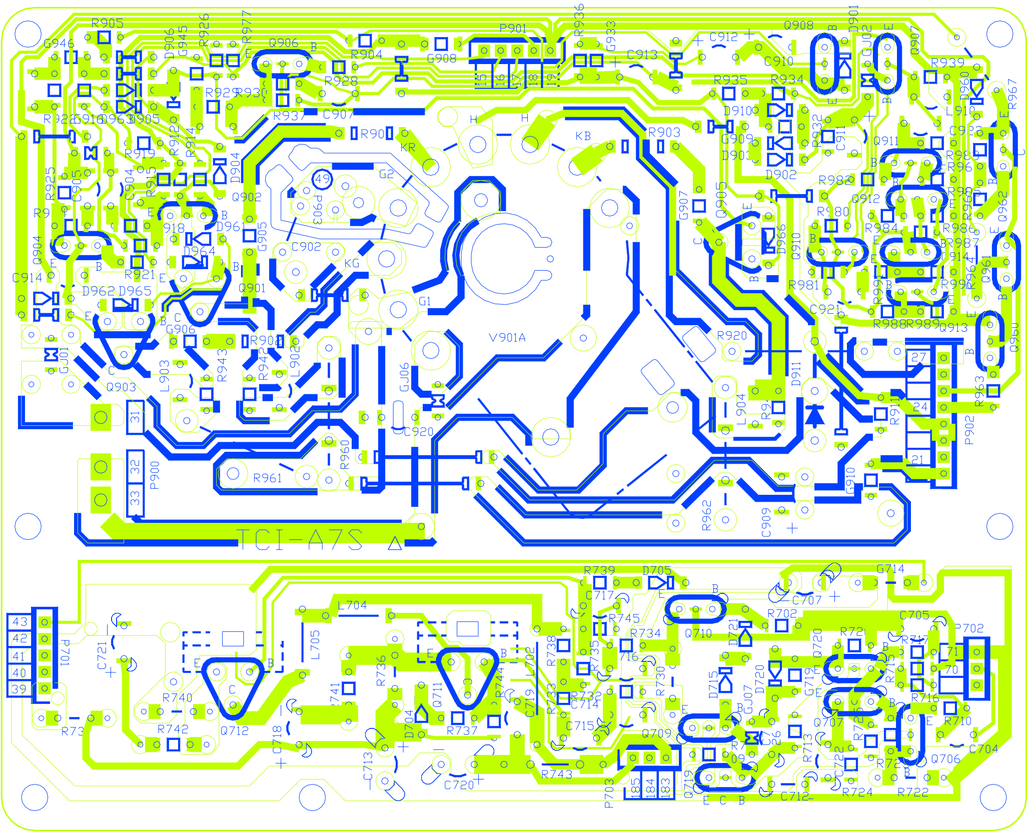
DIGI-COMB BOARD PB9398

BOTTOM (FOIL) SIDE


2354638
PZ01
CZ38

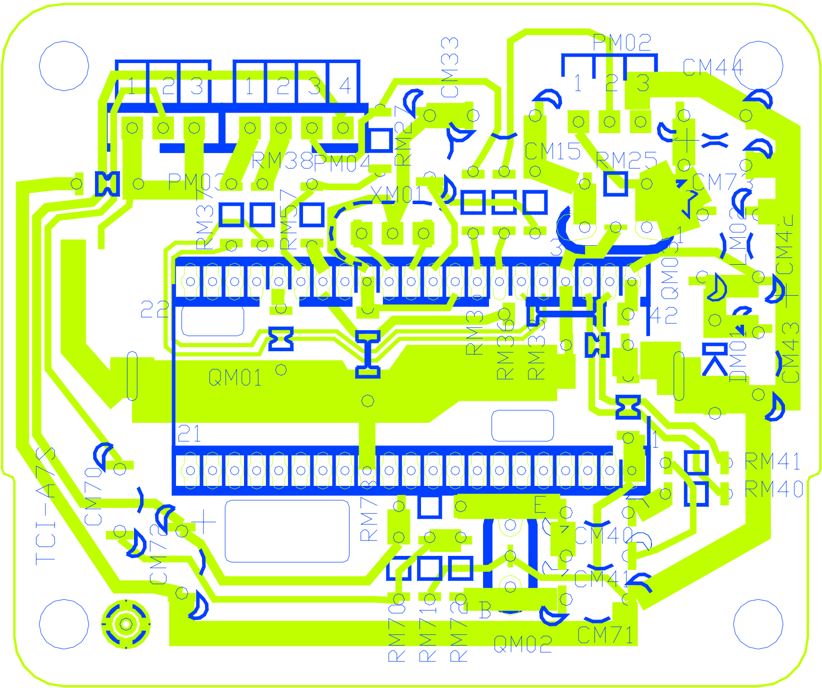
CRT DRIVE BOARD PB8642

BOTTOM (FOIL) SIDE


V901A
TCI-A7S
P901
P902
P701
P702

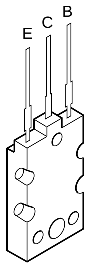
V-CHIP BOARD PB8688

BOTTOM (FOIL) SIDE

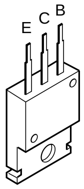

PM02
CM44
QM01
TCI-A7S
RM41
RM40
QM02
CM71

TERMINAL VIEW OF TRANSISTORS

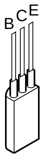
① 2SD2253
(old)
2SC5243



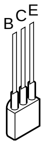
② 2SC3852
2SD1763A
2SC1569
2SC4544
2SA1788
2SA1306
2SA1186A



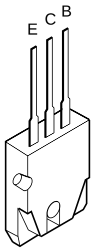
③ 2SC752GTM
2SC2482
2SC2655
2SC4721P



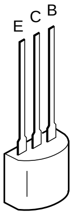
④ 2SC752
2SA562TM
2SA1015
2SC1815
2SC2878
2SC1740S
2SC2120
2SA9335



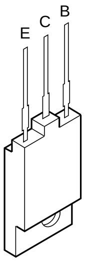
⑤ 2SA1788



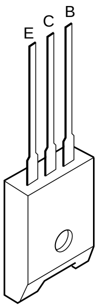
⑥ RN2203
RN2201
RN2004
RN1203
RN1204
RN2204
RN1205
RN1202
RN1201



⑦ 2SD1554
2SD2253
2SD1556
2SD2553
2SC5143



⑧ ON4409



MEMO

SPECIFICATIONS (Representative : 36AX60)

TELEVISION SYSTEM	NTSC standard
CHANNEL COVERAGE	VHF: 2 through 13 UHF: 14 through 69 Cable TV: mid band (A-8 through A-1, A through I) super band (J through W) hyper band (AA through ZZ, AAA, BBB) ultra band (65 through 94, 100 through 125)
POWER SOURCE	105W 120V AC, 60Hz
AUDIO POWER	5W + 5W
SPEAKER TYPE	2-3/8 x 4-3/4 inches (60 x 120 mm)
VIDEO/AUDIO TERMINALS	S-VIDEO INPUT Y: 1V (p-p), 75 ohm, negative sync. C: 0.286V (p-p) (burst signal), 75 ohm VIDEO/AUDIO INPUT VIDEO: 1V(p-p), 75 ohm, negative sync. AUDIO: 150mV(rms) (30% modulation equivalent, 47k ohm) ColorStream™ (Color Difference) VIDEO/AUDIO INPUT Y: 1V (p-p), 75 ohm Cr: 0.7V (p-p), 75 ohm Cb: 0.7V (p-p), 75 ohm AUDIO: 2V (p-p), 1 kohm
DIMENSIONS	Width 878 mm Height 774 mm Depth 642 mm
MASS	73.0 kg

* Please refer to owner's manual in detail.

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN

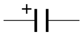
SCHEMATIC DIAGRAM

MODEL : 32AX60 Chassis No. TAC0023
36AX60 Chassis No. TAC0024

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt
   1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt
   10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
    Electolytic capacitor Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

SCHEMATIC DIAGRAM

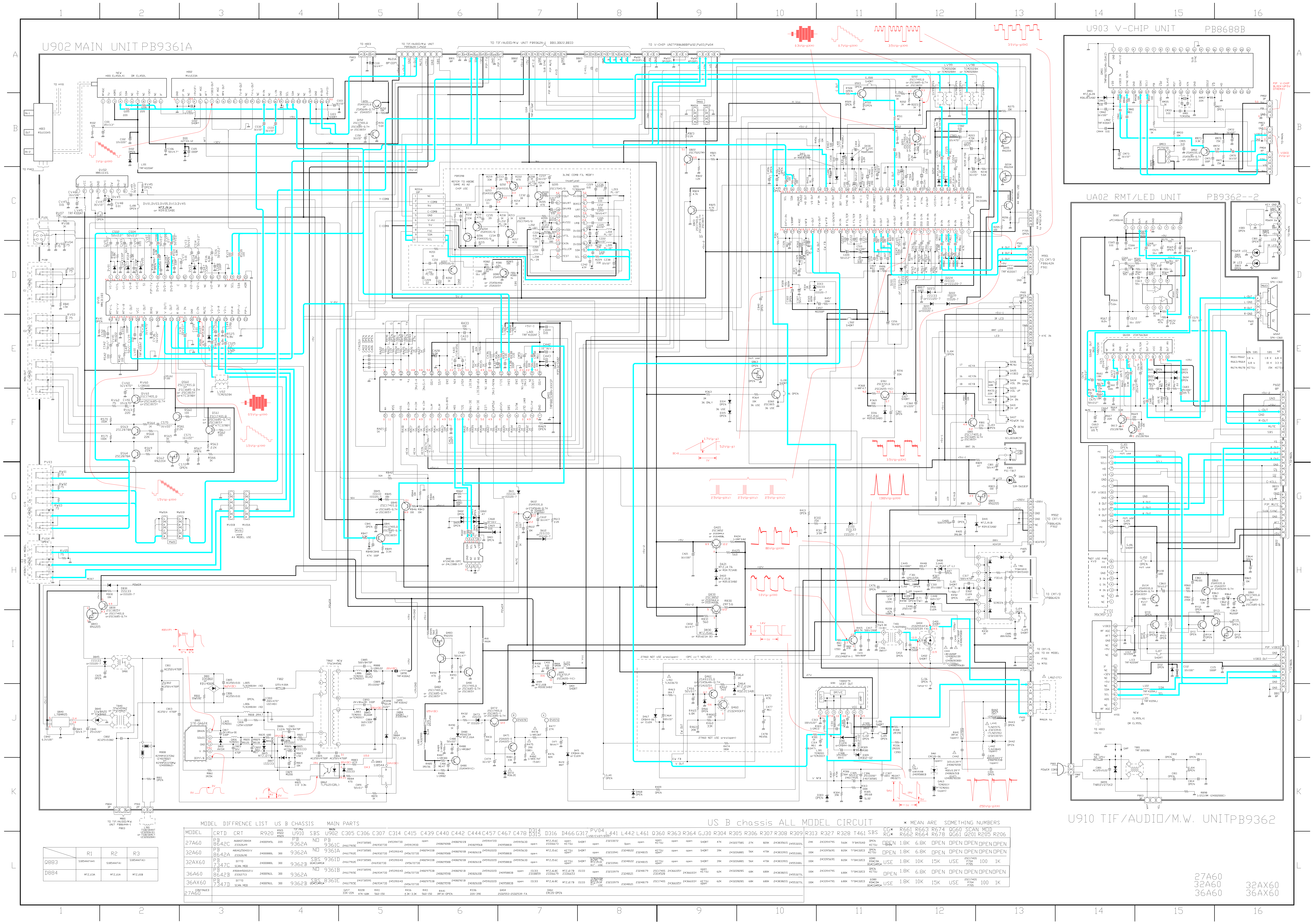
MODEL : 32AX60 **Chassis No. TAC0023**
36AX60 **Chassis No. TAC0024**

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION", "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" ON THE MANUAL FOR THIS MODEL.

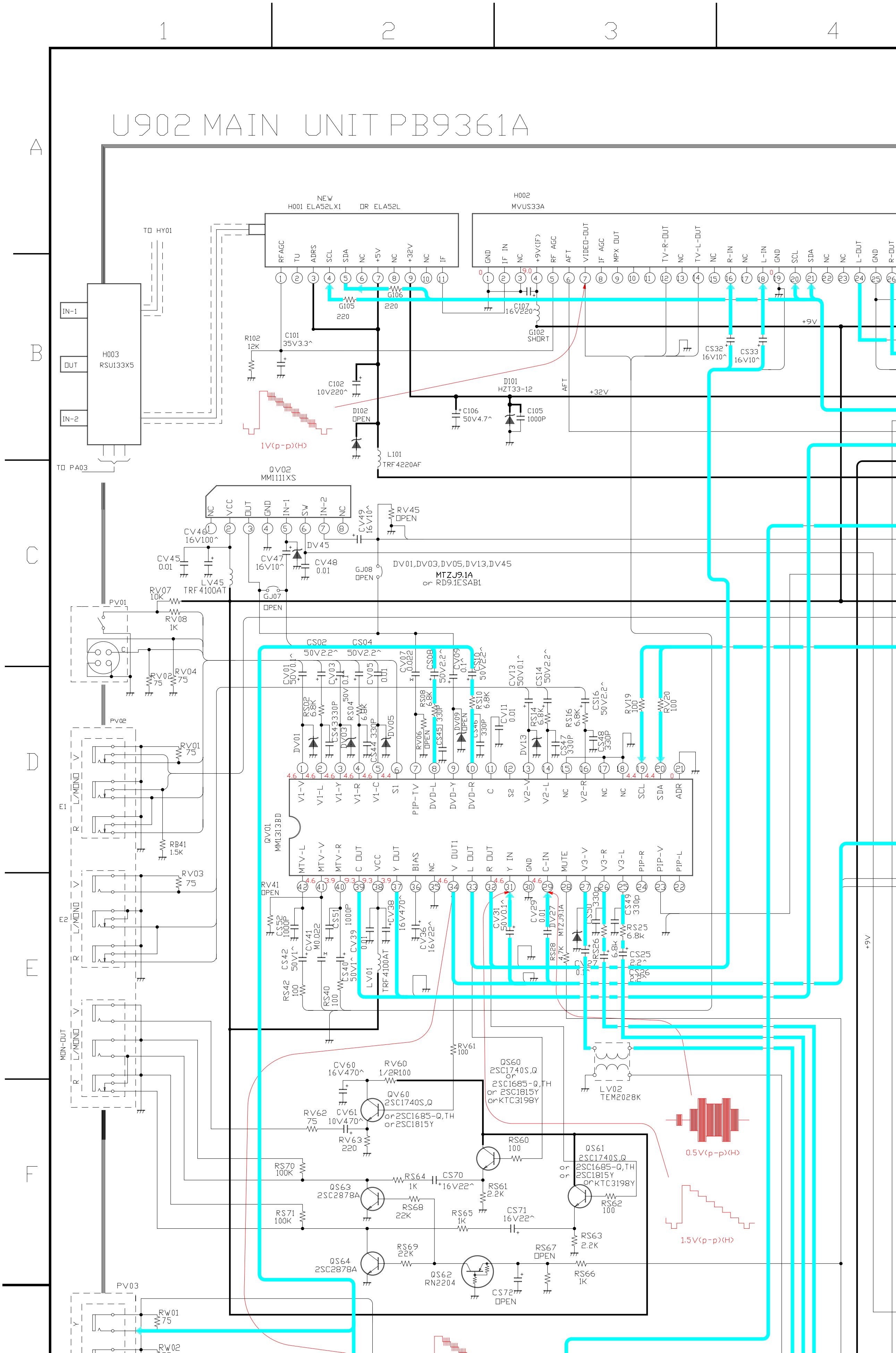
CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

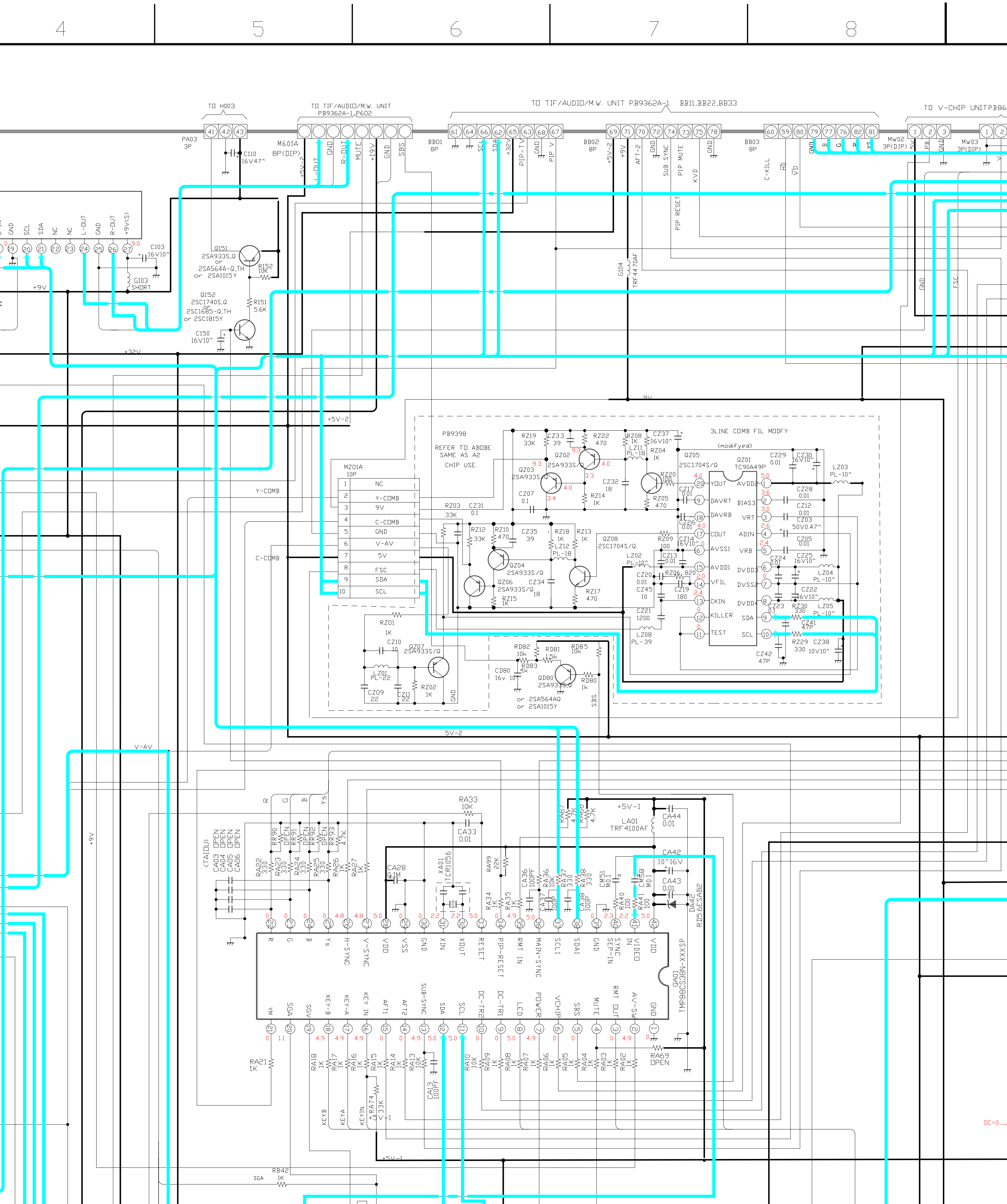
NOTE:

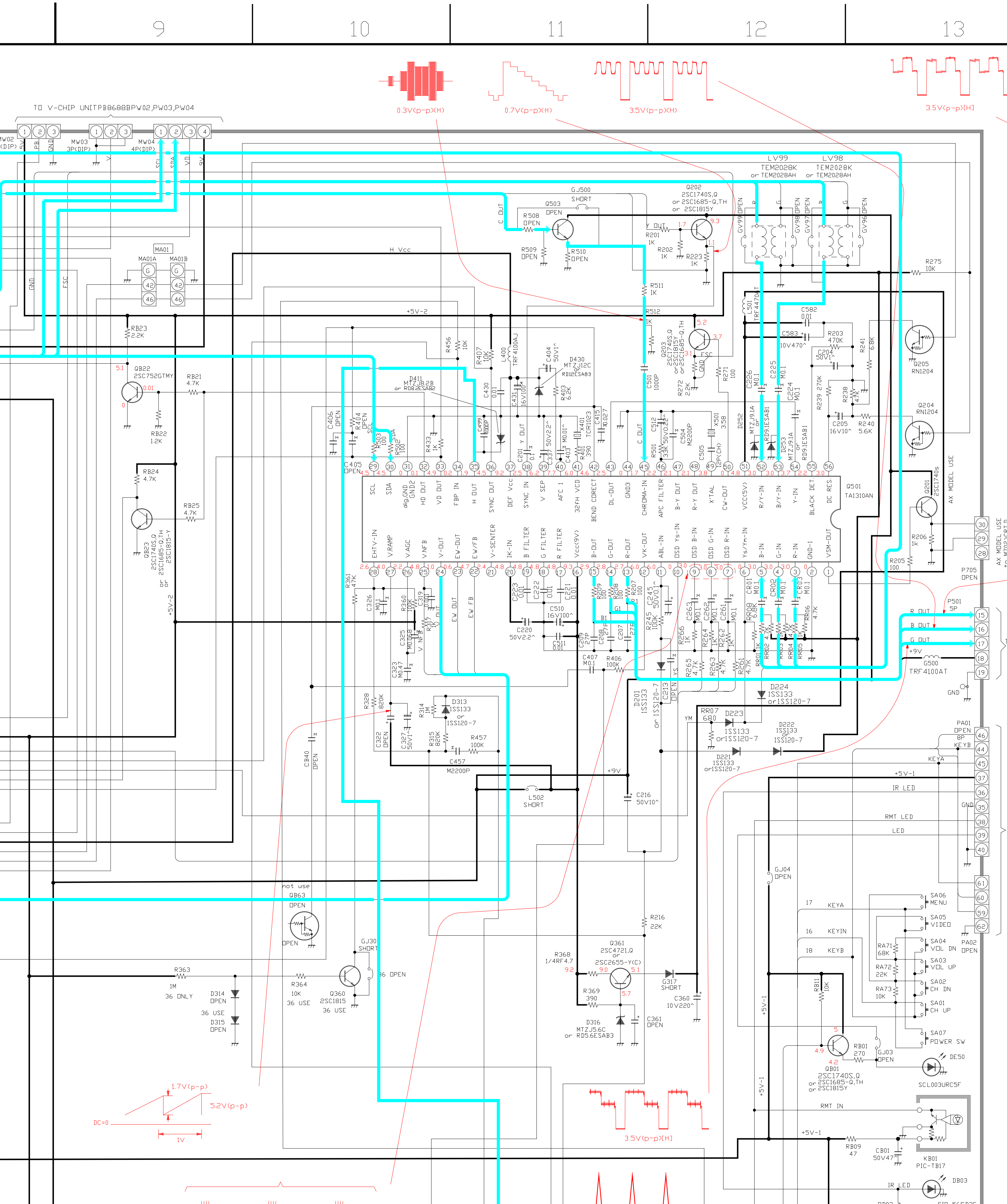
1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
   1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon compsistion of 1/2 watt
   1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
   K = ±10% G = ±2% F = ±1%
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF, and the values more than 1 in pF.
   All capacitors are ceramic 50V, unless otherwise noted as the following marks.
   Electolytic capacitor Mylar capacitor
3. The parts indicated with " ⚠ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 120 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary ±20% except H.V.

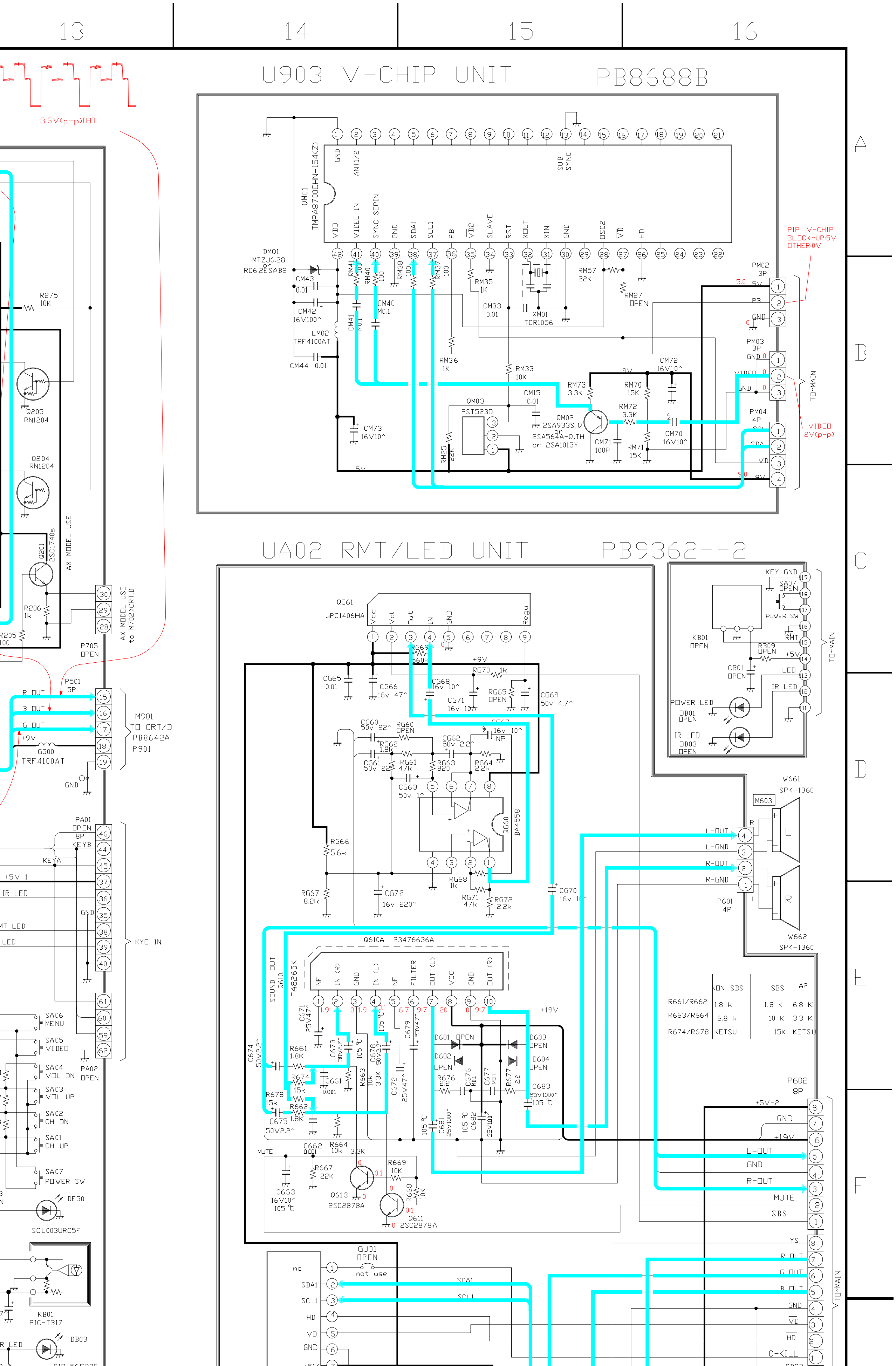

U902 MAIN UNIT PB9361A
U903 V-CHIP UNIT PB8688B
UA02 RMT/LED UNIT PB9362--2
U910 TIF/AUDIO/M.W. UNIT PB9362
MODEL DIFFRENCE LIST US B CHASSIS
US B chassis ALL MODEL CIRCUIT
27A60
32A60
36A60
32AX60
36AX60

U902 MAIN UNIT PB9361A


1
2
3
4
A
B
C
D
E
F
TO HY01
IN-1
OUT
IN-2
H003
RSU133X5
TO PA03
NEW
H001 ELA52LX1 OR ELA52L
RFAGC
TU
ADRS
SCL
SDA
+5V
NC
+32V
IF
H002
MVUS33A
GND
IF IN
+9V(IF)
RF AGC
AFT
VIDEO-OUT
IF AGC
MPX OUT
TV-R-OUT
TV-L-OUT
R-IN
L-IN
L-OUT
R-OUT
G105 220
G106 220
C107 16V220^
G102 SHORT
R102 12K
C101 35V3.3^
C102 10V220^
D102 OPEN
L101 TRF4220AF
1V(p-p)(H)
D101 HZT33-12
C106 50V4.7^
C105 1000P
+32V
+9V
CS32 16V10^
CS33 16V10^
QV02 MM1111XS
VCC
OUT
IN-1
SW
IN-2
CV46 16V100^
CV45 0.01
CV47 16V10^
CV48 0.01
DV45
LV45 TRF4100AT
CV49 16V10^
RV45 OPEN
GJ08 OPEN
GJ07 OPEN
DV01,DV03,DV05,DV13,DV45
MTZJ9.1A
or RD9.1ESAB1
RV07 10K
RV08 1K
PV01
RV02 75
RV04 75
PV02
RV01 75
E1
RB41 1.5K
RV03 75
E2
MON-OUT
V
L/MONO
R
CS02 50V2.2^
CS04 50V2.2^
CV01 50V0.1^
CV03
CV05 0.01
CV07 0.022
CS08 50V2.2^
CV09 0.1^
CS10 50V2.2^
CV13 50V0.1^
CS14 50V2.2^
CS16 50V2.2^
RS02 6.8K
RS04 6.8K
CS43 330P
CS44 330P
RS06 OPEN
RS08 6.8K
CS45 OPEN
DV09 OPEN
RS10 6.8K
CS46 330P
CV11 0.01
RS14 6.8K
CS47 330P
RS16 6.8K
CS48 330P
RV19 100
RV20 100
QV01 MM1313BD
V1-V
V1-L
V1-Y
V1-R
V1-C
S1
PIP-TV
DVD-L
DVD-Y
DVD-R
C
S2
V2-V
V2-L
NC
V2-R
SCL
SDA
ADR
MTV-L
MTV-V
MTV-R
C OUT
VCC
Y OUT
BIAS
V OUT1
L OUT
R OUT
Y IN
GND
C-IN
MUTE
V3-V
V3-R
V3-L
PIP-R
PIP-V
PIP-L
RV41 OPEN
CS52 1000P
CS42 50V1^
CV41 M0.022
CS51 1000P
CS40 50V1^
CV39 0.01
LV01 TRF4100AT
CV38 16V470^
CV36 16V22^
CV31 50V0.1^
CV29 0.01
DV27 MTZJ9.1A
CS50 330P
CS49 330P
RS25 6.8K
RS26 6.8K
CS25
CS26
RS28 4.7K
RS42 100
RS40 100
RV61 100
QS60 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y or KTC3198Y
LV02 TEM2028K
0.5V(p-p)(H)
CV60 16V470^
RV60 1/2R100
QV60 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
RV62 75
CV61 10V470^
RV63 220
RS60 100
QS61 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y or KTC3198Y
RS70 100K
RS64 1K
CS70 16V22^
RS61 2.2K
QS63 2SC2878A
RS68 22K
RS71 100K
RS65 1K
CS71 16V22^
RS62 100
1.5V(p-p)(H)
RS63 2.2K
RS69 22K
QS64 2SC2878A
QS62 RN2204
CS72 OPEN
RS67 OPEN
RS66 1K
PV03
RW01 75
RW02

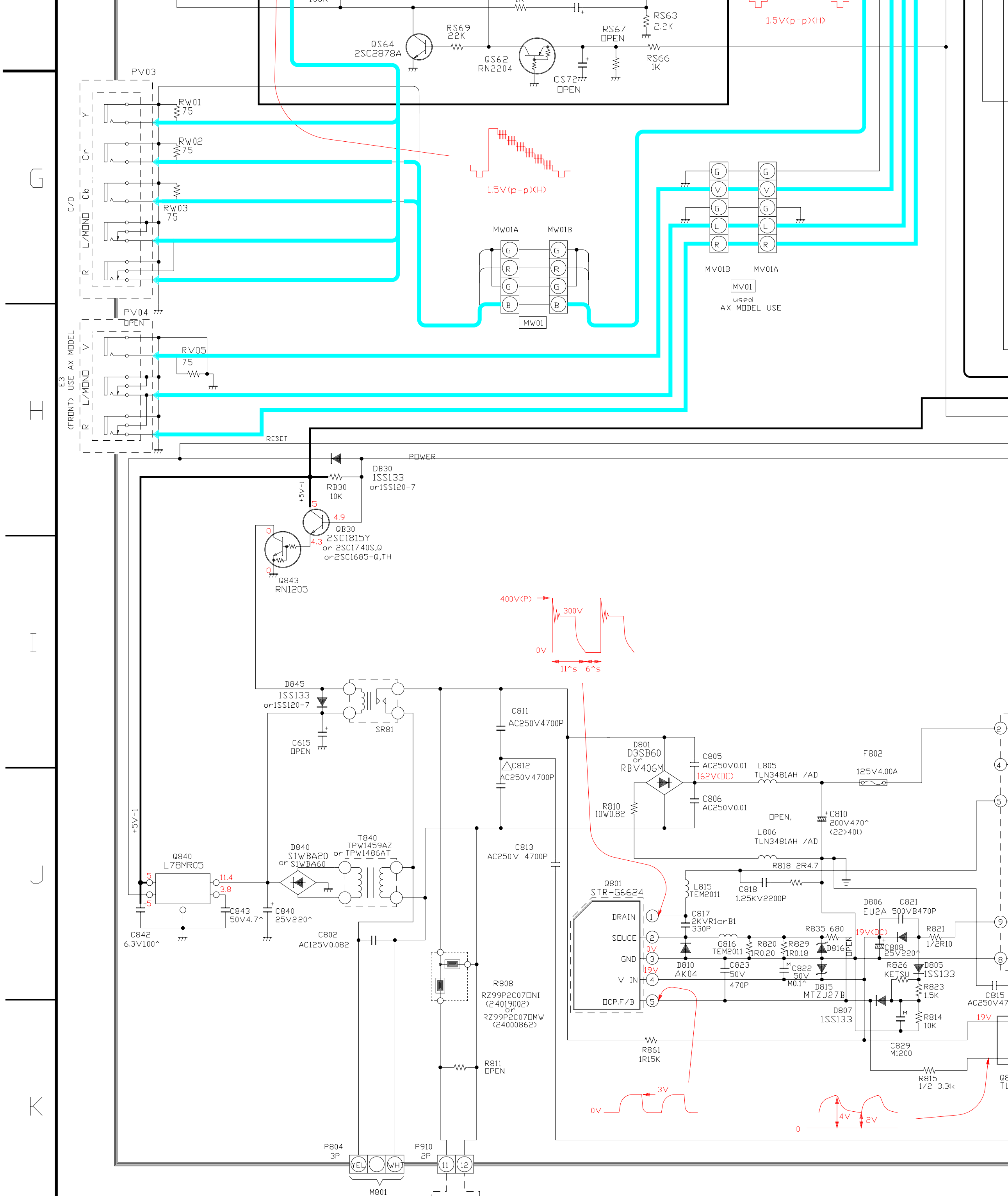

4
5
6
7
8
TO H003
PA03 3P
C110 16V47^
TO TIF/AUDIO/M.W. UNIT PB9362A-1 P602
M601A 8P(DIP)
+5V-2
L-OUT
GND
R-OUT
MUTE
+19V
GND
SBS
TO TIF/AUDIO/M.W. UNIT PB9362A-1 BB11,BB22,BB33
BB01 8P
SCL
SDA
+32V
PIP-TV
GND
PIP V
BB02 8P
+5V-2
+9V
AFT-2
GND
SUB SYNC
PIP MUTE
KVD
GND
PIP RESET
BB03 8P
C-KILL
HD
VD
GND
B
G
R
YS
MW02 3P(DIP)
5V
PB
GND
TO V-CHIP UNIT PB86
MW03 3P(DIP)
GND
SCL
SDA
NC
NC
L-OUT
GND
R-OUT
+9V(S)
C103 16V10^
Q151 2SA933S,Q or 2SA564A-Q,TH or 2SA1015Y
R152 10K
G103 SHORT
+9V
Q152 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
R151 5.6K
C150 16V10^
+32V
G104 TRF4470AF
GND
FSC
9V
+5V-2
PB9398
REFER TO ABOBE SAME AS A2 CHIP USE
3LINE COMB FIL MODFY (modifyed)
MZ01A 10P
1 NC
2 Y-COMB
3 9V
4 C-COMB
5 GND
6 V-AV
7 5V
8 FSC
9 SDA
10 SCL
Y-COMB
C-COMB
RZ19 33K
CZ33 39
RZ22 470
RZ08 1K
CZ37 16V10^
LZ11 PL-18
RZ04 1K
QZ05 2SC1704S/Q
QZ01 TC90A49P
CZ29 0.01
CZ30 16V10^
LZ03 PL-10^
QZ02 2SA933S/Q
QZ03 2SA933S
CZ32 18
RZ20 100
RZ14 1K
RZ05 470
CZ07 0.1
RZ03 33K
CZ31 0.1
YOUT
DAVRT
DAVRB
COUT
AVSS1
AVDD1
VFIL
CKIN
KILLER
TEST
AVDD2
BIAS3
VRT
ADIN
VRB
DVDD3
DVSS2
DVDD4
SDA
SCL
CZ17 0.01
CZ26 0.01
CZ28 0.01
CZ12 0.01
CZ03 50V0.47^
CZ05 0.01
CZ25 16V10^
CZ24 0.01
LZ04 PL-10^
CZ22 16V10^
LZ05 PL-10^
CZ23 0.1
RZ30 330
CZ41 47P
RZ29 330
CZ38 10V10^
CZ42 47P
RZ12 33K
RZ10 470
CZ35 39
RZ18 1K
LZ12 PL-18
RZ13 1K
QZ08 2SC1704S/Q
RZ09 100
CZ14 16V10^
LZ02 PL-10^
CZ13 0.01
QZ04 2SA933S/Q
QZ06 2SA933S/Q
CZ34 18
RZ15 1K
RZ17 470
CZ20 0.01
CZ45 10
RZ06 820
CZ19 180
CZ21 1200
LZ08 PL-39
RZ01 1K
CZ10 10
QZ07 2SA933S/Q
LZ01 PL-22
CZ09 22
CZ11 22
RZ02 1K
GND
RD82 10k
RD81 1.5k
RD85 10k
RD83 1k
CD80 16v 10
QD80 2SA933S,Q or 2SA564AQ or 2SA1015Y
RD80 1k
SBS
5V-2
V-AV
+9V
R
G
B
YS
RR90 OPEN
RR91 OPEN
RR92 OPEN
RR93 4.7K
(TAIOU)
CA03 OPEN
CA04 OPEN
CA05 OPEN
CA06 OPEN
RA22 330
RA23 330
RA24 330
RA25 330
RA26 1K
RA27 1K
RA33 10K
CA33 0.01
CA28 0.1M
XA01 TCR1056
RA99 22K
RA34 1K
RA35 1K
CA36 100PF
RA36 10K
CA37 100P
RA37 330
CA38 100P
RA38 330
RA67 4.7K
RA68 4.7K
+5V-1
LA01 TRF4100AF
CA44 0.01
CA42 10^16V
CM51 M0.1
CM58 M0.1
RA40 100
RA41 100
CA43 0.01
DA42 RD5.6ESAB2
QA01 TMP88CS38N-XXXSP
R
G
B
Ys
H-SYNC
V-SYNC
VDD
VSS
GND
XIN
XOUT
RESET
PIP-RESET
RMT IN
MAIN-SYNC
SCL1
SDA1
GND
SYNC SEP-IN
VIDEO IN
VDD
YM
SGA
SGV
KEY-B
KEY-A
KEY IN
AFT1
AFT2
SUB-SYNC
SDA
SCL
DC-TR2
DC-TR1
LED
POWER
VCHIP
SBS
MUTE
RMT OUT
AV-S-W
GND
RA21 1K
RA18 1K
RA17 1K
RA16 1K
RA15 1K
RA14 1K
RA13 10K
CA13 100PF
RA74 33K
RA10 10K
RA09 1K
RA08 1K
RA07 1K
RA06 1K
RA05 1K
RA04 1K
RA03 1K
RA02 1K
RA69 OPEN
KEYB
KEYA
KEYIN
+5V-1
RB42 1K
SGA
DC=0


9
10
11
12
13
0.3V(p-p)(H)
0.7V(p-p)(H)
3.5V(p-p)(H)
3.5V(p-p)[H]
TO V-CHIP UNIT PB8688BPW02,PW03,PW04
MW03 3P(DIP)
MW04 4P(DIP)
SCL
SDA
VD
9V
GND
FSC
MA01
MA01A
MA01B
H Vcc
+5V-2
RB23 2.2K
QB22 2SC752GTMY
RB21 4.7K
RB22 1.2K
RB24 4.7K
RB25 4.7K
QB23 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815-Y
C OUT
R508 OPEN
Q503 OPEN
R509 OPEN
LR510 OPEN
GJ500 SHORT
Y OUT
R201 1K
R202 1K
R223 1K
Q202 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
LV99 TEM2028K or TEM2028AH
LV98 TEM2028K or TEM2028AH
GV99 OPEN
GV98 OPEN
GV97 OPEN
GV96 OPEN
R275 10K
R511 1K
R512 1K
Q203 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
C501 1000P
R272 2.2K
R271 100
L501 TRF4470AT
C582 0.01
C583 10V470^
R203 470K
C204 50V1^
R241 6.8K
Q205 RN1204
Q204 RN1204
R239 270K
R238 4.7K
C205 16V10^
R240 5.6K
C226 M0.1
C225 M0.1
C224 M0.1
D252 MTZJ9.1A or RD9.1ESAB1
D253 MTZJ9.1A or RD9.1ESAB1
R456 10K
R407 10K
L400 TRF4100AJ
C404 50V1^
D430 MTZJ12C or RD12ESAB3
D411 MTZJ8.2B or RD8.2ESAB2
C430 0.01
C431 16V100^
R403 6.2K
C406 OPEN
R404 OPEN
R503 100
R502 100
R433 1K
C499 1000P
C201 0.1
C337 50V2.2^
C403 M0.01^
X401 TCR1023
R401 390
C415 0.027
C512 50V0.22^
R501 33K
C504 M2200P
C505 12P(CH)
X501 3.58
C405 OPEN
Q501 TA1310AN
SCL
SDA
dig.GND GND2
HD OUT
VD OUT
FBP IN
H OUT
SYNC OUT
DEF Vcc
SYNC IN
V SEP
AFC 1
32FH VCO
BEND CORRECT
DL-OUT
GND3
CHROMA-IN
APC FILTER
B-Y OUT
R-Y OUT
XTAL
CW-OUT
VCC(5V)
R/Y-IN
B/Y-IN
Y-IN
BLACK DET.
DC RES.
EHTV-IN
V.RAMP
V.AGC
V.NFB
V-OUT
EW-OUT
EW/FB
V-SENTER
IK-IN
B FILTER
G FILTER
R FILTER
Vcc(9V)
B-OUT
G-OUT
R-OUT
VK-OUT
ABL-IN
OSD Ys-IN
OSD B-IN
OSD G-IN
OSD R-IN
Ys/Ym-IN
B-IN
G-IN
R-IN
GND-1
VSM-OUT
Q201 2SC1740s
AX MODEL USE
R206 1k
R205 100
P705 OPEN
P501 5P
R OUT
B OUT
G OUT
+9V
G500 TRF4100AT
GND
R361 47K
C326 M0.1
R360 100K
C319
V OUT
R317
V NFB
EW OUT
EW FB
C325 M0.68
C323 M0.47
C223 0.01
C222 0.1
C221 0.01
C510 16V100^
C220 50V2.2^
C211 0.01
C209 27P
C208 27P
C207 27P
R209 100
R208 100
R207 100
R245 100K
C245 50V0.1^
C263 M0.1
C262 M0.1
C261 M0.1
CR01 M0.1
CR02 M0.1
CR03 M0.1
RR06 4.7K
RR08 6.8K
R266 1K
R264 1K
R262 1K
RR01 1K
RR02 4.7K
RR04
RR05
R265 4.7K
R263 4.7K
R261 4.7K
C407 M0.1
R406 100K
D201 1SS133 or 1SS120-7
C213 OPEN
YS
YM
RR07 680
D223 1SS133 or 1SS120-7
D224 1SS133 or 1SS120-7
D222 1SS133 or 1SS120-7
D221 1SS133 or 1SS120-7
R328 820K
C322 OPEN
C327 50V1^
R314 1M
R315 820K
D313 1SS133 or 1SS120-7
R457 100K
C457 M2200P
C840 OPEN
+9V
L502 SHORT
C216 50V10^
not use
QB63 OPEN
R216 22K
Q361 2SC4721,Q or 2SC2655-Y(C)
R368 1/4RF4.7
R369 390
G317 SHORT
C360 10V220^
D316 MTZJ5.6C or RD5.6ESAB3
C361 OPEN
R363 1M
36 ONLY
D314 OPEN
36 USE
D315 OPEN
R364 10K
36 USE
Q360 2SC1815
36 USE
GJ30 SHORT
36 OPEN
1.7V(p-p)
5.2V(p-p)
DC=0
1V
3.5V(p-p)[H]
PA01 OPEN 8P KEYB
KEYA
+5V-1
IR LED
RMT LED
LED
GJ04 OPEN
KEYA
KEYIN
KEYB
17
16
18
SA06 MENU
SA05 VIDEO
SA04 VOL DN
SA03 VOL UP
SA02 CH DN
SA01 CH UP
SA07 POWER SW
PA02 OPEN
RA71 68K
RA72 22K
RA73 10K
RB11 10K
+5V-1
QB01 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
RB01 270
GJ03 OPEN
DE50
SCL003URC5F
RMT IN
RB09 47
CB01 50V47^
KB01 PIC-TB17
IR LED
DB03
15
16
17
18
19
46
44
45
37
36
35
38
39
40
61
60
59
62
30
29
28



13
14
15
16
A
B
C
D
E
F
U903 V-CHIP UNIT
PB8688B
QM01
TMPA8700CHN-154(Z)
GND
ANT1/2
SUB SYNC
VDD
VIDEO IN
SYNC SEPIN
GND
SDA1
SCL1
PB
VD2
SLAVE
RST
XOUT
XIN
GND
OSC2
VD
HD
DM01
MTZJ6.2B
RD6.2ESAB2
CM43
0.01
CM42
16V100^
LM02
TRF4100AT
CM44 0.01
CM41
CM40
M0.1
RM41
RM40
RM38
RM37
100
RM35
1K
CM33
0.01
XM01
TCR1056
RM57
22K
RM27
OPEN
RM36
1K
RM33
10K
CM73
16V10^
QM03
PST523D
RM25
22K
CM15
0.01
QM02
2SA933S,Q
2SA564A-Q,TH
or 2SA1015Y
RM73
3.3K
RM70
15K
RM72
3.3K
CM71
100P
RM71
15K
CM72
16V10^
CM70
16V10^
9V
5V
PM02
3P
5.0
PB
GND
PM03
3P
VIDEO
PM04
4P
SCL
SDA
VD
9V
PIP V-CHIP
BLOCK-UP:5V
OTHER:0V
VIDEO
2V(p-p)
TO-MAIN
3.5V(p-p)[H]
R275
10K
Q205
RN1204
Q204
RN1204
Q201
2SC1740s
AX MODEL USE
R206
1k
R205
100
AX MODEL USE
to M702>CRT.D
P705
OPEN
P501
5P
R OUT
B OUT
G OUT
+9V
G500
TRF4100AT
GND
M901
TO CRT/D
PB8642A
P901
UA02 RMT/LED UNIT
PB9362--2
QG61
uPC1406HA
Vcc
Vol
Out
IN
GND
Regu
RG69
560k
+9V
RG70 1k
CG65
0.01
CG66
16v 47^
CG68
16v 10^
CG71
16v 10^
RG65
OPEN
CG69
50v 4.7^
CG67
16v 10^
NP
CG60
50v 22^
RG60
OPEN
RG62
1.8k
CG62
50v 2.2^
CG61
50v 22
RG61
47k
RG63
820
RG64
2.2k
CG63
50v 1^
QG60
BA4558
RG66
5.6k
RG67
8.2k
CG72
16v 220^
RG68
1k
RG71
47k
RG72
2.2k
CG70
16v 10^
KEY GND
SA07
OPEN
POWER SW
KB01
OPEN
RB09
OPEN
RMT
+5V
CB01
OPEN
LED
IR LED
POWER LED
DB01
OPEN
IR LED
DB03
OPEN
TO-MAIN
W661
SPK-1360
M603
L-OUT
L-GND
R-OUT
R-GND
P601
4P
W662
SPK-1360
Q610A 23476636A
SOUND OUT
Q610
TA8265K
NF
IN (R)
GND
IN (L)
NF
FILTER
OUT (L)
VCC
GND
OUT (R)
+19V
C671
25V47^
C674
50V2.2^
R661
1.8K
C673
50V2.2^
105 ℃
C678
50V2.2^
C679
25V47^
R674
15K
C661
0.001
R663
3.3K
C672
25V47^
R678
15k
R662
1.8K
C675
50V2.2^
D601 OPEN
D602
OPEN
D603
OPEN
D604
OPEN
R676
2.2
C676
M01
C677
M01
R677
2.2
C683
25V1000^
105 ℃
C681
25V1000^
C682
35V100^
MUTE
C662
0.001
R664
10k
3.3K
R667
22K
Q613
2SC2878A
R669
10K
R668
10K
Q611
2SC2878A
C663
16V10^
105 ℃
P602
8P
+5V-2
GND
+19V
L-OUT
GND
R-OUT
MUTE
SBS
PA01
OPEN
8P
KEYB
KEYA
+5V-1
IR LED
RMT LED
LED
GND
KYE IN
SA06
MENU
SA05
VIDEO
SA04
VOL DN
SA03
VOL UP
SA02
CH DN
SA01
CH UP
SA07
POWER SW
PA02
OPEN
DE50
SCL003URC5F
KB01
PIC-TB17
DB03
GJ01
OPEN
not use
nc
SDA1
SCL1
HD
VD
GND
YS
R OUT
G OUT
B OUT
GND
VD
HD
C-KILL
TO-MAIN

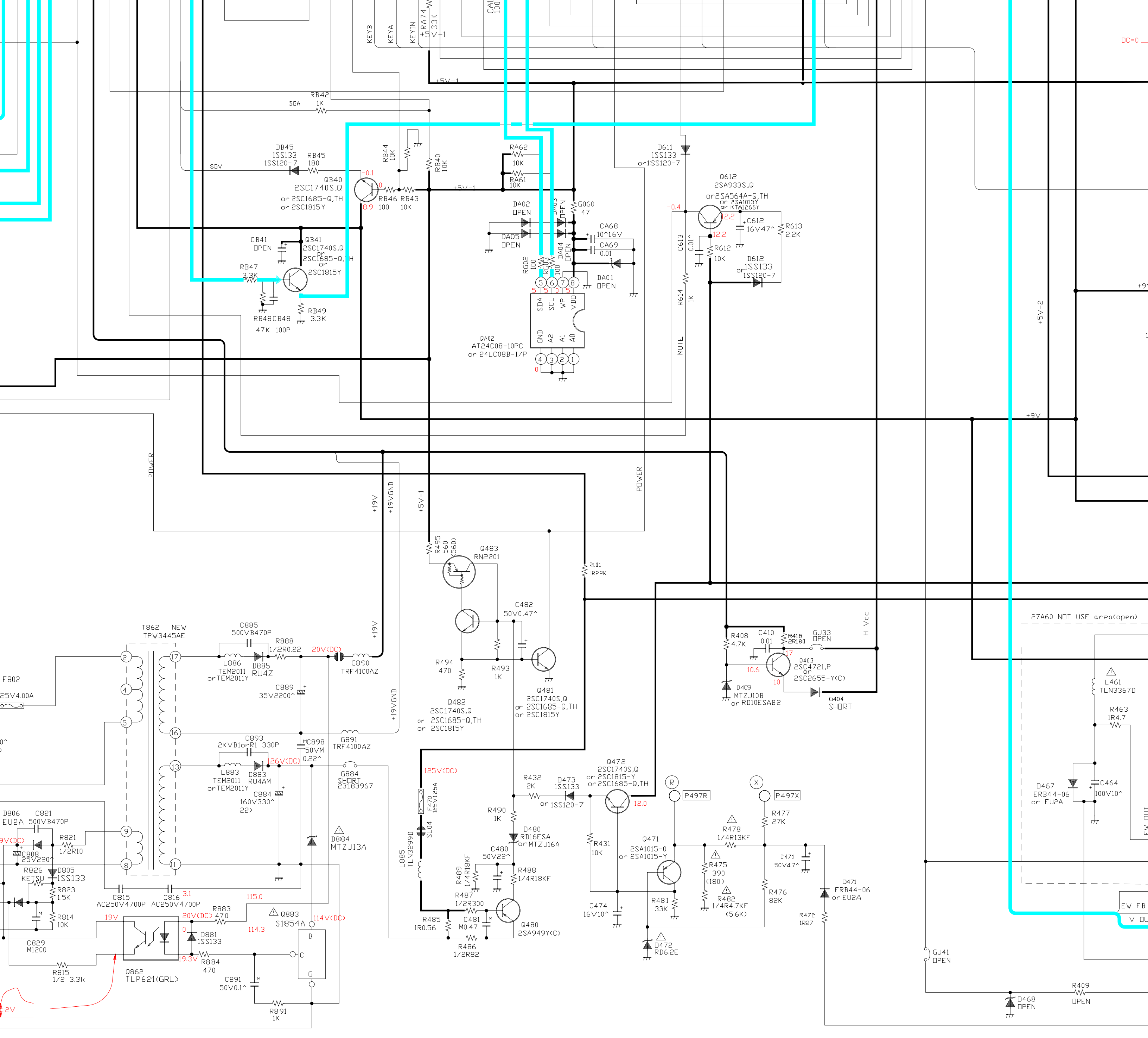
	NON SBS	SBS	A2
R661/R662	1.8 k	1.8 K	6.8 K
R663/R664	6.8 k	10 K	3.3 K
R674/R678	KETSU	15K	KETSU


G
H
I
J
K
L
QS64
2SC2878A
RS69
22K
QS62
RN2204
CS72
OPEN
RS67
OPEN
RS63
2.2K
RS66
1K
1.5V(p-p)(H)
PV03
RW01
75
RW02
75
RW03
75
Y
Cr
Cb
C/D
L/MONO
R
1.5V(p-p)(H)
MW01A
MW01B
MW01
G
R
G
B
V
L
MV01B
MV01A
MV01
used
AX MODEL USE
PV04
OPEN
RV05
75
E3 USE AX MODEL
(FRONT)
V
L/MONO
R
RESET
POWER
DB30
1SS133
or 1SS120-7
RB30
10K
+5V-1
QB30
2SC1815Y
or 2SC1740S,Q
or 2SC1685-Q,TH
4.9
4.3
Q843
RN1205
400V(P)
300V
0V
11^s
6^s
D845
1SS133
or 1SS120-7
SR81
C615
OPEN
C811
AC250V4700P
C812
AC250V4700P
D801
D3SB60
or
RBV406M
C805
AC250V0.01
162V(DC)
L805
TLN3481AH /AD
F802
125V4.00A
C806
AC250V0.01
R810
10W0.82
OPEN,
C810
200V470^
(22>401)
L806
TLN3481AH /AD
R818 2R4.7
+5V-1
Q840
L78MR05
11.4
3.8
C843
50V4.7^
C840
25V220^
C842
6.3V100^
D840
S1WBA20
or S1WBA60
T840
TPW1459AZ
or TPW1486AT
C813
AC250V 4700P
C802
AC125V0.082
Q801
STR-G6624
L815
TEM2011
C818
1.25KV2200P
C817
2KVR1orB1
330P
DRAIN
SOUCE
GND
V IN
OCP.F/B
0V
19V
D810
AK04
G816
TEM2011
C823
50V
470P
R820
1R0.20
R829
1R0.18
C822
50V
M0.1^
D815
MTZJ27B
D816
R835 680
19V(DC)
D806
EU2A
C821
500V470P
R821
1/2R10
C808
25V220^
R826
KETSU
D805
1SS133
R823
1.5K
R814
10K
C815
AC250V47
19V
D807
1SS133
C829
M1200
R815
1/2 3.3k
R808
RZ99P2C07ONI
(24019002)
or
RZ99P2C07OMW
(24000862)
R811
OPEN
R861
1R15K
3V
0V
4V
2V
0
P804
3P
YEL
WH
P910
2P
11
12
M801
TO TIF/AUDIO/M.W.
UNIT PB8644A-1
P803
L901
TSB2304AT
(23200631)
or TSB2304CT
(23200284)

	R1	R2	R3
Q883	S1854A(FA4)	S1854A(FA)	S1854A(FA1)
D884	MTZJ13A	MTZJ11A	MTZJ10B

MODEL DIFFRENCE LIST US B CHASSIS

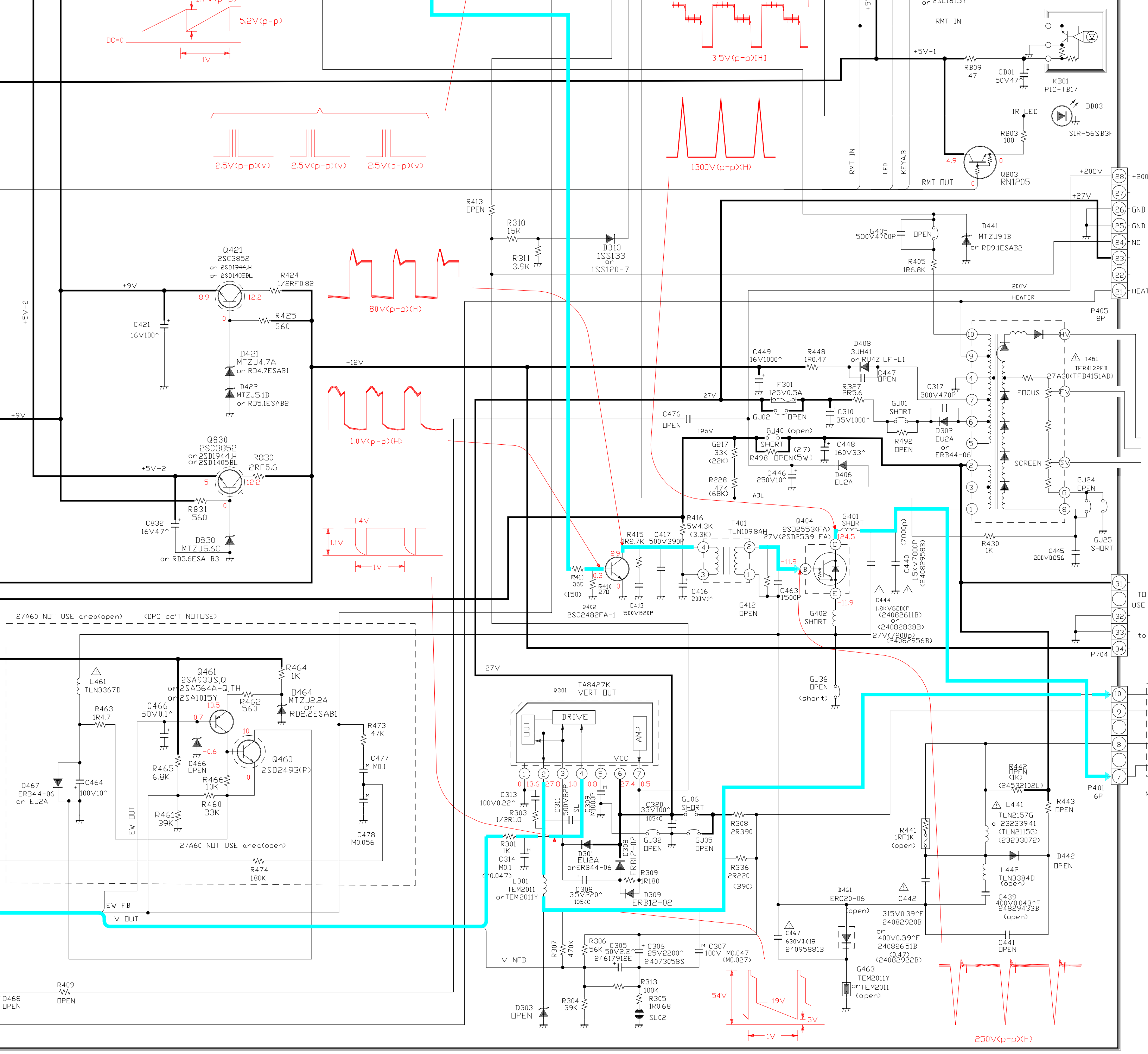
MODEL	CRTD	CRT	R920	R915 R922 R929	TIF/MW. U910	SBS
27A60	PB 8642C	A68ADT28X04 23312649	24000945L	220	PB 9362A	NO
32A60	PB 8642A	A81AGZ50X01(V 23312690	24000880L	300	9362A	NO
32AX60	PB 7347C	DITTO SCAN MOD	24000880L	300	9362B	SBS QG*CG*RG
36A60	PB 8642B	A90AHH50X02(V 23312713	24000961L	300	9362A	NO
36AX60	PB 7347D	DITTO SCAN MOD	24000961L	300	9362B	SBS QG*CG*RG
CONTINUED 27A60						


KEYB
KEYA
KEYIN
RA74 3.3K
+5V-1
RB42 1K
SGA
SGV
DB45 1SS133 1SS120-7
RB45 180
QB40 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
RB44 10K
RB40 10K
RB46 100
RB43 10K
QB41 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
CB41 OPEN
RB47 3.3K
RB48 47K
CB48 100P
RB49 3.3K
RA62 10K
RA61 10K
DA02 OPEN
DA05 OPEN
DA03 OPEN
DA04 OPEN
G060 47
CA68 10^16V
CA69 0.01
DA01 OPEN
RG02 100
QA02 AT24C08-10PC or 24LC08B-I/P
SDA SCL WP VDD
GND A2 A1 A0
D611 1SS133 or 1SS120-7
Q612 2SA933S,Q or 2SA564A-Q,TH or 2SA1015Y or KTA1266Y
C612 16V47^
R613 2.2K
R612 10K
D612 1SS133 or 1SS120-7
C613 0.01^
R614 1K
MUTE
+9V
+5V-2
POWER
+19V
+19VGND
+5V-1
R495 560 (560)
Q483 RN2201
C482 50V0.47^
R494 470
R493 1K
Q481 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
Q482 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
R101 1R22K
T862 NEW TPW3445AE
C885 500VB470P
R888 1/2R0.22
L886 TEM2011 or TEM2011Y
D885 RU4Z
20V(DC)
G890 TRF4100AZ
C889 35V2200^
F802
125V4.00A
C893 2KVB1orR1 330P
L883 TEM2011 or TEM2011Y
D883 RU4AM
126V(DC)
C884 160V330^ 22>
C898 50VM 0.22^
G891 TRF4100AZ
G884 SHORT 23183967
D884 MTZJ13A
125V(DC)
F470 125V1.25A
SL04
L885 TLN3299D
D806 EU2A
C821 500VB470P
R821 1/2R10
C808 25V220^
R826 KETSU
D805 1SS133
R823 1.5K
R814 10K
C829 M1200
C815 AC250V4700P
C816 AC250V4700P
R815 1/2 3.3k
Q862 TLP621(GRL)
R883 470
D881 1SS133
Q883 S1854A
114V(DC)
R884 470
C891 50V0.1^
R891 1K
R432 2K
D473 1SS133 or 1SS120-7
R490 1K
D480 RD16ESA or MTZJ16A
C480 50V22^
R489 1/4R18KF
R488 1/4R18KF
R487 1/2R300
C481 M0.47
R485 1R0.56
R486 1/2R82
Q480 2SA949Y(C)
Q472 2SC1740S,Q or 2SC1815-Y or 2SC1685-Q,TH
R431 10K
Q471 2SA1015-O or 2SA1015-Y
C474 16V10^
R481 33K
D472 RD6.2E
P497R
P497X
R478 1/4R13KF
R475 390 (180)
R482 1/4R4.7KF (5.6K)
R477 27K
C471 50V4.7^
R476 82K
D471 ERB44-06 or EU2A
R472 1R27
R408 4.7K
C410 0.01
R410 2R180
GJ33 OPEN
H Vcc
Q403 2SC4721,P or 2SC2655-Y(C)
D409 MTZJ10B or RD10ESAB2
G404 SHORT
27A60 NOT USE area(open)
L461 TLN3367D
R463 1R4.7
D467 ERB44-06 or EU2A
C464 100V10^
EW FB
V OU
GJ41 OPEN
D468 OPEN
R409 OPEN
DC=0

JS B CHASSIS MAIN PARTS

R915 R922 R929	TIF/MW. U910	SBS	MAIN U902	C305	C306	C307	C314	C415	C439	C440	C442	C444	C457	C467	C478	D314 D315	D316	D466	G317	PV04 LV02/CV27/DV27	L441	L442	L461	Q360	R363
220	PB 9362A	NO	PB 9361C	24617915E	24073058S	24693273D	24539473D	24591393D	open	24082928B	24082922B	24082956B	24591472D	24095881B	24591563D	open	MTZJ5.6C 23316673	open KETSU	SHORT	open	23233072	Open	open	open KETSU	open
300	9362A	NO	9361A	24617912E	24073058S	24693273D	24539104D	24567273D	24829433B	24082958B	24082920B	24082611B	24591222D	24095881B	24591563D	open	MTZJ5.6C	KETSU open	SHORT	open	23233941	23248122	23248115	KETSU open	open
300	9362B	SBS QG*CG*RG*	9361D	24617912E	24073058S	24693273D	24539104D	24567273D	24829433B	24082958B	24082920B	24082611B	24591222D	24095881B	24591563D	open	MTZJ5.6C	KETSU open	SHORT	TEM2028K RV95 75 MTZJ9.1A 0.1^ USE	23233941	23248122	23248115	KETSU open	open
300	9362A	NO	9361B	24617915E	24073059S	24693473D	24539104D	24567273D	24829753B	24082959B	24082921B	24082610B	24591222D	24095883B	open	1S133 23118859	MTZJ6.8C 23316679	MTZJ2.7B 23316653	1S133	open	23233979	23248121	23248179	2SC1740S 23114528	24366105Y
300	9362B	SBS QG*CG*RG*	8361E	24617915E	24073059S	24693473D	24539104D	24567273D	24829753B	24082959B	24082921B	24082610B	24591222D	24095883B	open	1S133	MTZJ6.8C	MTZJ2.7B	1S133	TEM2028K RV95 75 MTZJ9.1A 0.1^ USE	23233979	23248121	23248179	2SC1740S	24366105Y
				G217 33K-22K	R228 47K-68K	R411 560-150		R416 4.3K-3.3K	R411 560-150	R441 1RF1K-OPEN		R336 220-390		Q404 2SD2553-2SD2539 FA			D461 ERC20-OPEN								

4 5 6 7 8

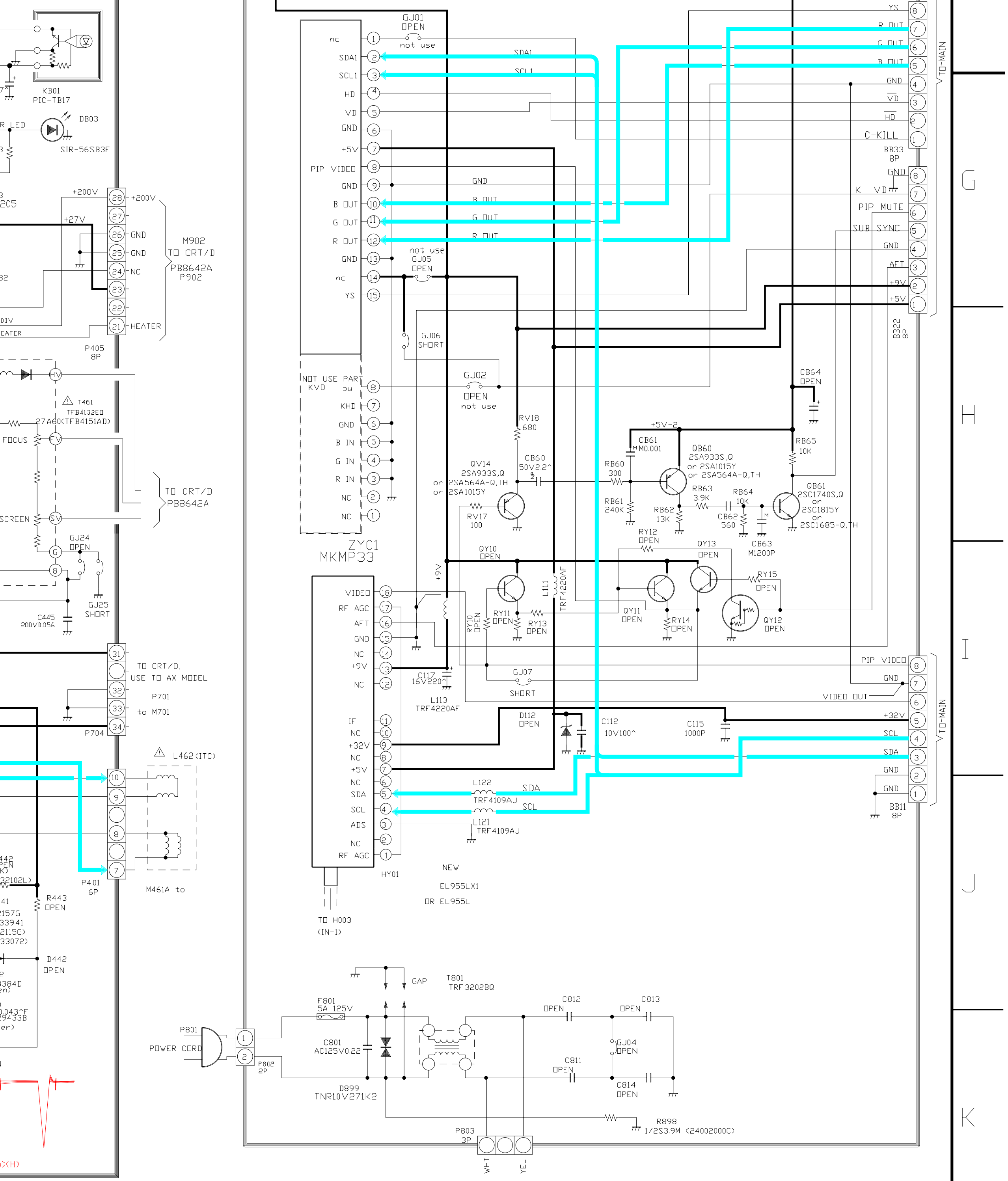

5.2V(p-p)
DC=0
1V
3.5V(p-p)(H)
2.5V(p-p)(v)
2.5V(p-p)(v)
2.5V(p-p)(v)
1300V(p-p)(H)
80V(p-p)(H)
1.0V(p-p)(H)
1.4V
1.1V
1V
54V
19V
5V
1V
250V(p-p)(H)
RMT IN
+5V-1
R809 47
C801 50V47^
K801 PIC-T817
IR LED
D803 SIR-56S83F
R803 100
Q803 RN1205
RMT OUT
RMT IN
LED
KEYA,B
+200V
+27V
GND
GND
NC
HEATER
P405 8P
+5V-2
+9V
+12V
Q421 2SC3852 or 2SD1944,H or 2SD1405BL
R424 1/2RF0.82
C421 16V100^
R425 560
D421 MTZJ4.7A or RD4.7ESAB1
D422 MTZJ5.1B or RD5.1ESAB2
Q830 2SC3852 or 2SD1944,H or 2SD1405BL
R830 2RF5.6
R831 560
C832 16V47^
D830 MTZJ5.6C or RD5.6ESA B3
R413 OPEN
R310 15K
R311 3.9K
D310 1SS133 or 1SS120-7
C405 500V4700P
D441 MTZJ9.1B or RD9.1ESAB2
R405 1R6.8K
C449 16V1000^
R448 1R0.47
D408 3JH41 or RU4Z LF-L1
C447 OPEN
F301 125V0.5A
R327 2R5.6
C317 500V470P
C476 OPEN
GJ02 OPEN
C310 35V1000^
GJ01 SHORT
D302 EU2A or ERB44-06
R492 OPEN
G217 33K (22K)
GJ40 (open) SHORT
R498 OPEN(5W)
C448 160V33^
C446 250V10^
D406 EU2A
R228 47K (68K)
ABL
T461 TFB4132ED (TFB4151AD)
FOCUS
SCREEN
GJ24 OPEN
GJ25 SHORT
R430 1K
C445 200V0.056
R416 5W4.3K (3.3K)
T401 TLN1098AH
Q404 2SD2553(FA) 27V(2SD2539 FA)
G401 SHORT
(7000p) C440 1.5KV7800P (24082958B)
R415 1R2.7K
C417 500V390P
R411 560 (150)
R410 270
Q402 2SC2482FA-1
C413 500V820P
C416 200V1^
G412 OPEN
C463 1500P
G402 SHORT
C444 1.8KV6200P (24082611B) or (24082838B) 27V(7200p) (24082956B)
P704
TO USE
to
27A60 NOT USE area(open) (DPC cc'T NOTUSE)
L461 TLN3367D
R463 1R4.7
Q461 2SA933S,Q or 2SA564A-Q,TH or 2SA1015Y
R464 1K
R462 560
D464 MTZJ2.2A or RD2.2ESAB1
C466 50V0.1^
Q460 2SD2493(P)
D466 OPEN
R465 6.8K
R466 10K
R460 33K
R461 39K
D467 ERB44-06 or EU2A
C464 100V10^
EW OUT
R473 47K
C477 M0.1
C478 M0.056
27A60 NOT USE area(open)
R474 180K
EW FB
V OUT
R409 OPEN
D468 OPEN
27V
Q301 TA8427K VERT OUT
DRIVE
OUT
AMP
VCC
C313 100V0.22^
R303 1/2R1.0
C311 500V82P
SL
C309 M1000P
C320 35V100^
GJ06 SHORT
R308 2R390
R301 1K
C314 M0.1 (0.047)
L301 TEM2011 or TEM2011Y
D301 EU2A or ERB44-06
D308 ERB12-02
GJ32 OPEN
GJ05 OPEN
R309 1R180
C308 35V220^
D309 ERB12-02
R336 2R220 (390)
V NFB
R307 470K
R306 56K
C305 50V2.2^ 24617912E
C306 25V2200^ 24073058S
C307 100V M0.047 (M0.027)
R313 100K
R305 1R0.68
SL02
R304 39K
D303 OPEN
GJ36 OPEN (short)
P401 6P
R442 OPEN (1K) (24532102L)
R443 OPEN
L441 TLN2157G or 23233941 (TLN2115G) (23233072)
R441 1RF1K (open)
D442 OPEN
L442 TLN3384D (open)
C439 400V0.043^F 24829433B (open)
D461 ERC20-06 (open)
C442 315V0.39^F 24082920B or 400V0.39^F 24082651B (0.47) (24082952B)
C467 630V0.018 24095881B
G463 TEM2011Y or TEM2011 (open)
C441 OPEN

US B chassis ALL MODEL CIRCUIT

∗ MEAN ARE SOMETHING NUMBERS

L461	Q360	R363	R364	GJ30	R304	R305	R306	R307	R308	R309	R313	R327	R328	T461	SBS	CG∗ RG∗	R661 R662	R663 R664	R674 R678	QG60 QG61	SCAN MOD Q201	R205	R206
open	open KETSU	open	open	SHORT	47K	24322758S	27K	820K	24383561S	24553221L	24K	24339479S	560K	TFB4151AD	OPEN KETSU	OPEN OPEN	1.8K	6.8K	OPEN	OPEN	OPEN	OPEN	OPEN
23248115	KETSU open	open	open	SHORT	39K	24322688S	56K	470K	24383391S	24553181L	100K	24339569S	820K	TFB4132ED	OPEN KETSU	OPEN	1.8K	6.8K	OPEN	OPEN	OPEN	OPEN	OPEN
23248115	KETSU open	open	open	SHORT	39K	24322688S	56K	470K	24383391S	24553181L	100K	24339569S	820K	TFB4132ED	QD80 RD∗CD∗ QG∗CG∗RG∗	USE	1.8K	10K	15K	USE	2SC1740S P704 P705	100	1K
23248179	2SC1740S 23114528	24366105Y	24366103Y	open KETSU	62K	24322828S	68K	680K	24383821S	24553271L	100K	24339479S	680K	TFB4132ED	OPEN KETSU	OPEN	1.8K	6.8K	OPEN	OPEN	OPEN	OPEN	OPEN
23248179	2SC1740S	24366105Y	24366103Y	KETSU open	62K	24322828S	68K	680K	24383821S	24553271L	100K	24339479S	680K	TFB4132ED	QD80 RD∗CD∗ QG∗CG∗RG∗	USE	1.8K	10K	15K	USE	2SC1740S P704 P705	100	1K

9 10 11 12 13


GJ01 OPEN not use
nc
SDA1
SCL1
HD
VD
GND
+5V
PIP VIDEO
B OUT
G OUT
R OUT
YS
not use GJ05 OPEN
GJ06 SHORT
GJ02 OPEN not use
NOT USE PART
KVD
KHD
B IN
G IN
R IN
NC
ZY01
MKMP33
R OUT
G OUT
B OUT
C-KILL
BB33 8P
K VD
PIP MUTE
SUB SYNC
AFT
+9V
+5V
BB22 8P
TO~MAIN
CB64 OPEN
+5V-2
RV18 680
CB60 50V2.2^
QV14 2SA933S,Q or 2SA564A-Q,TH or 2SA1015Y
RV17 100
CB61 M0.001
QB60 2SA933S,Q or 2SA1015Y or 2SA564A-Q,TH
RB60 300
RB61 240K
RB63 3.9K
RB62 13K
RB64 10K
CB62 560
CB63 M1200P
RB65 10K
QB61 2SC1740S,Q or 2SC1815Y or 2SC1685-Q,TH
RY12 OPEN
QY10 OPEN
QY13 OPEN
RY15 OPEN
QY11 OPEN
RY14 OPEN
QY12 OPEN
RY10 OPEN
RY11 OPEN
RY13 OPEN
L111 TRF4220AF
+9V
VIDEO
RF AGC
IF
+32V
ADS
SDA
SCL
C117 16V220
L113 TRF4220AF
GJ07 SHORT
D112 OPEN
C112 10V100^
C115 1000P
PIP VIDEO
VIDEO OUT
BB11 8P
L122 TRF4109AJ
L121 TRF4109AJ
HY01
NEW EL955LX1 OR EL955L
TO H003 (IN-1)
GAP
T801 TRF3202BQ
F801 5A 125V
C801 AC125V0.22
D899 TNR10V271K2
C812 OPEN
C813 OPEN
GJ04 OPEN
C811 OPEN
C814 OPEN
R898 1/2S3.9M (24002000C)
P801 POWER CORD
P802 2P
P803 3P
WHT
YEL
KB01 PIC-TB17
DB03 SIR-56SB3F
R LED
+200V
+27V
HEATER
M902 TO CRT/D PB8642A P902
P405 8P
T461 TFB4132ED 27A60(TFB4151AD)
HV
FOCUS
FV
SCREEN
SV
TO CRT/D PB8642A
GJ24 OPEN
GJ25 SHORT
C445 200V0.056
TO CRT/D, USE TO AX MODEL
P701 to M701
P704
L462(ITC)
M461A to
P401 6P
R443 OPEN
D442 OPEN

U910 TIF/AUDIO/M.W. UNITPB9362

RS

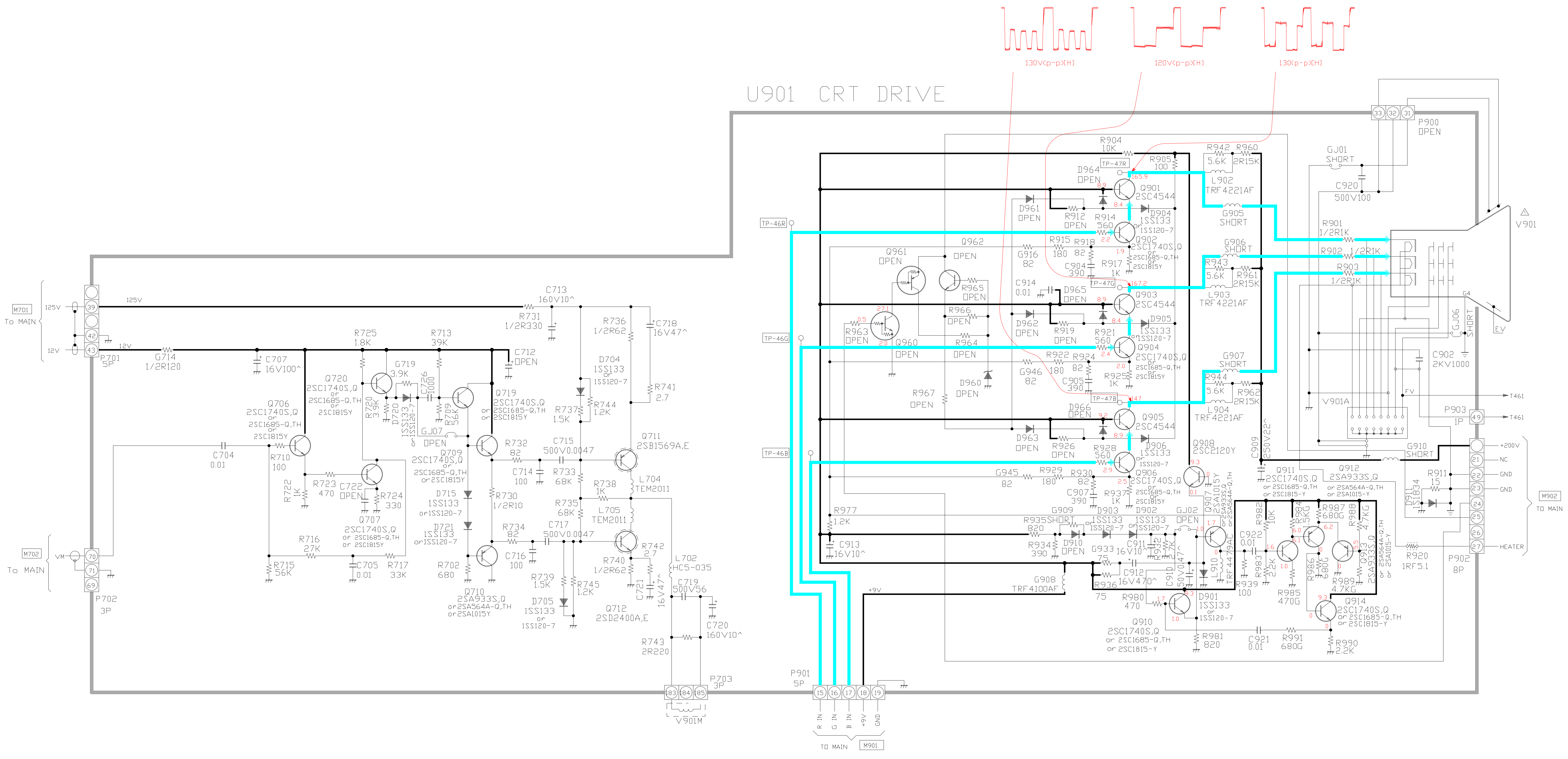
R206
OPEN
OPEN
1K
OPEN
1K

27A60
32A60
36A60

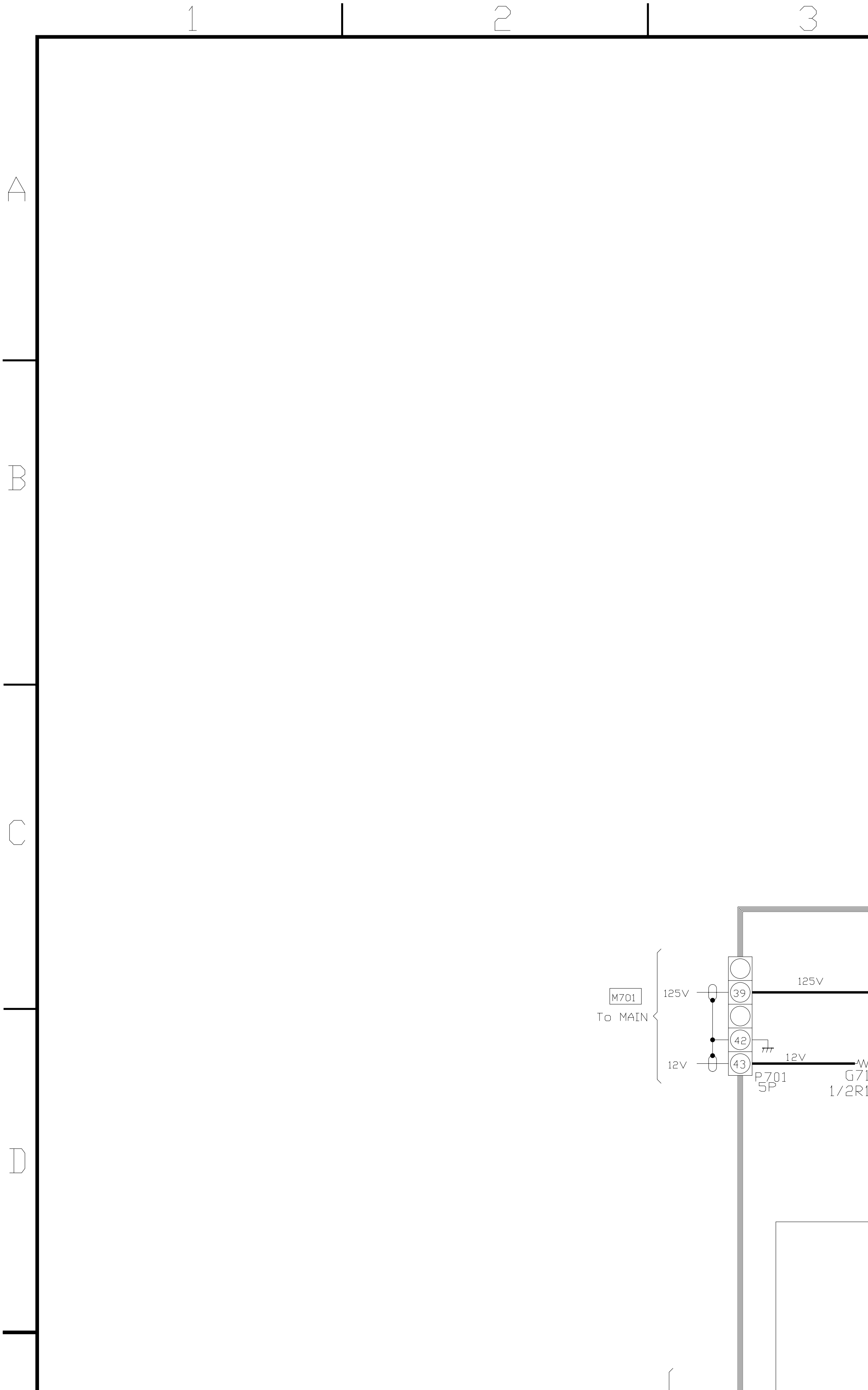
32AX60
36AX60

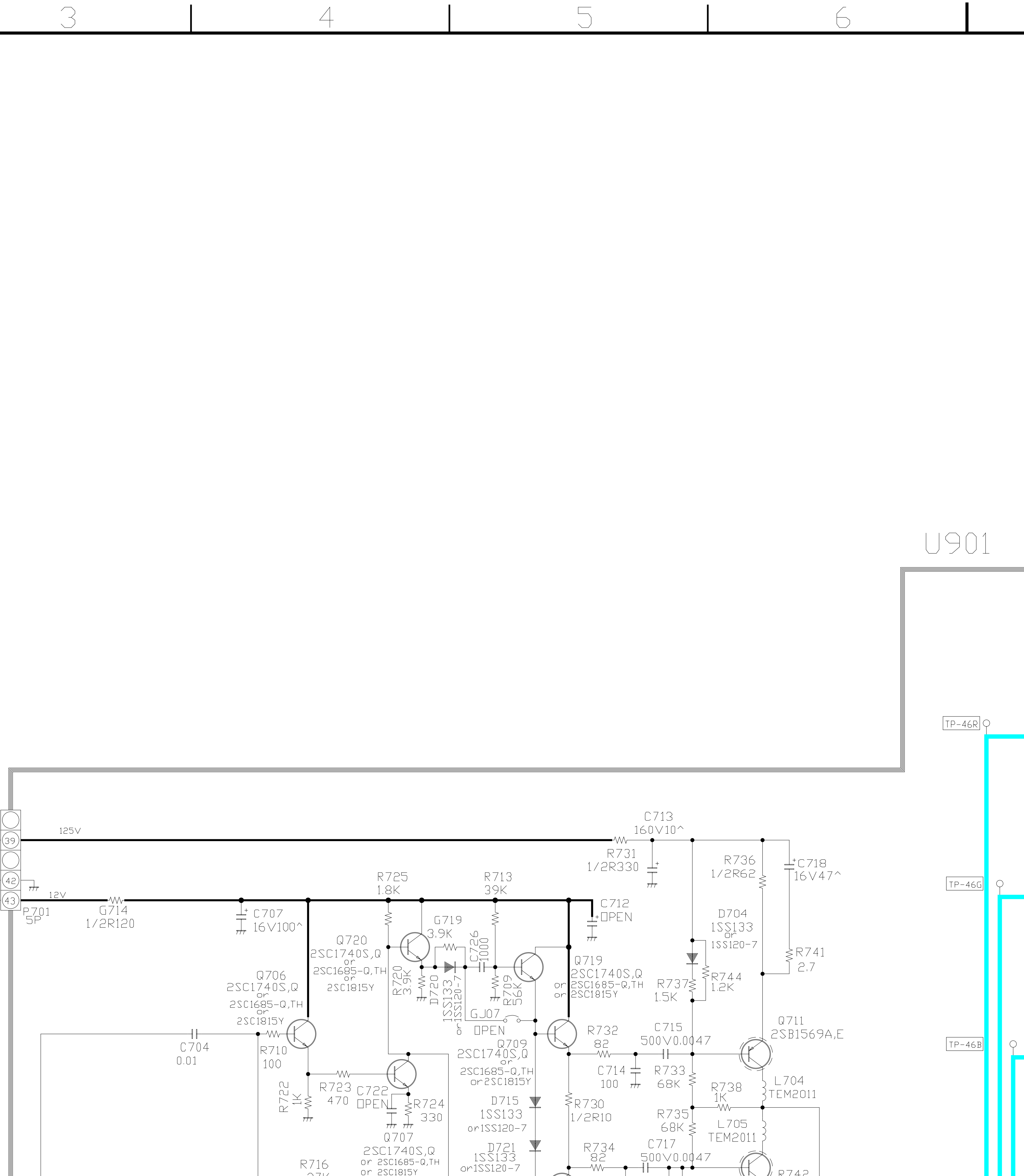
G H I J K L

13 14 15 16

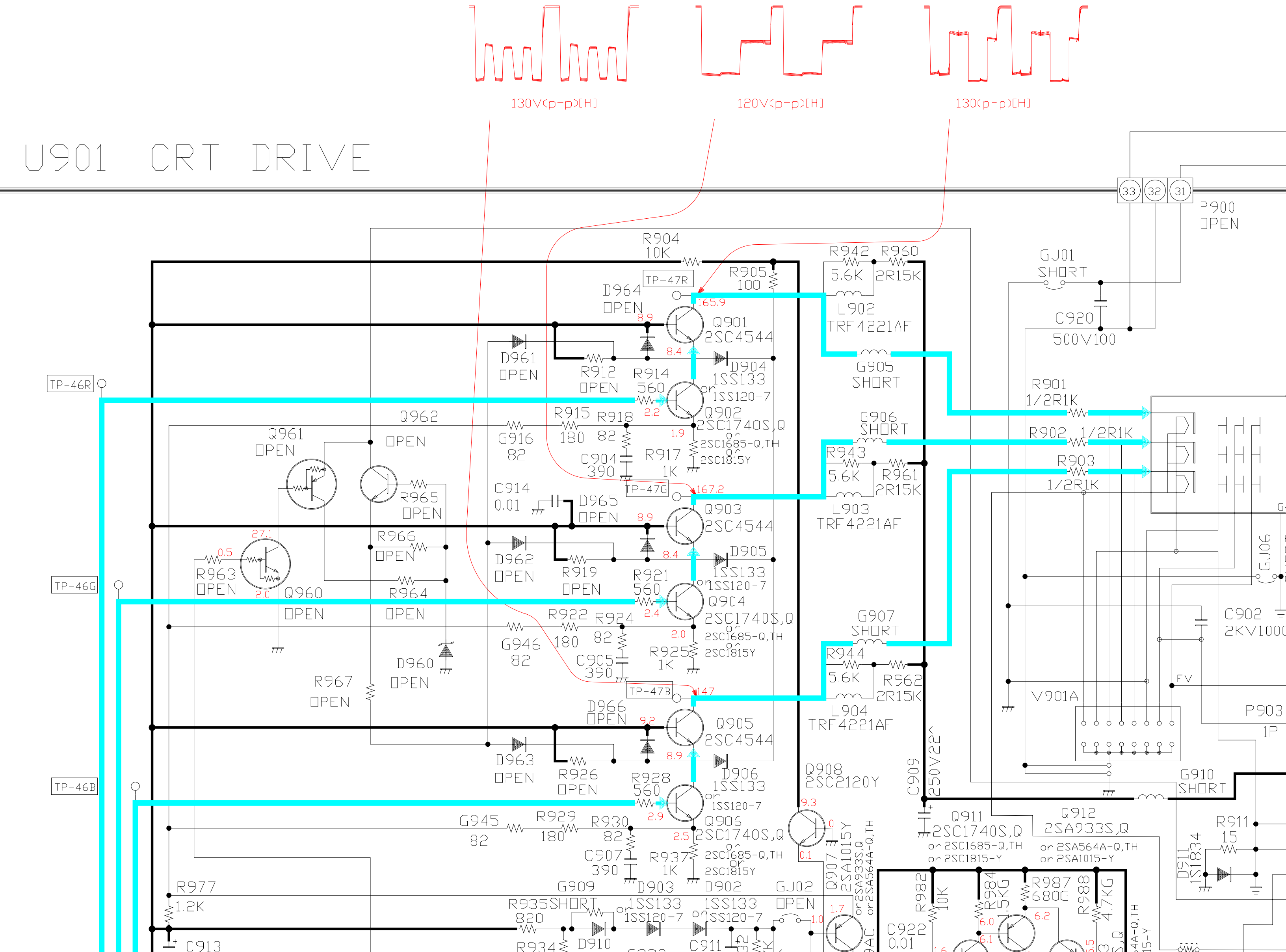

130V(p-p)H
120V(p-p)H
130(p-p)H
U901 CRT DRIVE
P900 OPEN
GJ01 SHORT
C920 500V100
V901
R904 10K
R942 5.6K
R960 2R15K
R905 100
D964 OPEN
L902 TRF4221AF
Q901 2SC4544
D961 OPEN
R912 OPEN
R914 560
D904 1SS133
Q902 2SC1740S,Q
G905 SHORT
G906 SHORT
R901 1/2R1K
R902 1/2R1K
R903 1/2R1K
R943 5.6K
R961 2R15K
L903 TRF4221AF
Q903 2SC4544
D905 1SS133
Q904 2SC1740S,Q
G907 SHORT
R944 5.6K
R962 2R15K
L904 TRF4221AF
Q905 2SC4544
D906 1SS133
Q906 2SC1740S,Q
Q961 OPEN
Q962 OPEN
Q960 OPEN
R963 OPEN
R965 OPEN
R966 OPEN
R964 OPEN
R967 OPEN
D960 OPEN
D962 OPEN
D963 OPEN
D965 OPEN
D966 OPEN
C914 0.01
G916 82
G946 82
G945 82
C902 2KV1000
G908 2SC2120Y
G910 SHORT
Q911 2SC1740S,Q
Q912 2SA933S,Q
Q914 2SC1740S,Q
Q910 2SC1740S,Q
D901 1SS133
G908 TRF4100AF
R977 1.2K
C913 16V10
P901 5P
R IN
G IN
B IN
+9V
GND
TO MAIN
M901
P902 8P
P903 1P
M902
TO MAIN
+200V
NC
GND
HEATER
V901A
R920 1RF5.1
125V
12V
M701
To MAIN
P701 5P
G714 1/2R120
C707 16V100
C713 160V10
R731 1/2R330
R736 1/2R62
C718 16V47
R725 1.8K
R713 39K
C712 OPEN
Q720 2SC1740S,Q
G719 3.9K
Q719 2SC1740S,Q
D704 1SS133
R737 1.5K
R744 1.2K
R741 2.7
Q706 2SC1740S,Q
C704 0.01
R710 100
GJ07 OPEN
Q709 2SC1740S,Q
R732 82
C715 500V0.0047
Q711 2SB1569A,E
R723 470
C722 OPEN
R724 330
D715 1SS133
R730 1/2R10
C714 100
R733 68K
R738 3K
L704 TEM2011
Q707 2SC1740S,Q
D721 1SS133
R734 82
R735 68K
C717 500V0.0047
L705 TEM2011
R742 2.7
R716 2.7K
R715 56K
C705 0.01
R717 33K
R702 680
C716 100
R740 1/2R62
L702 HC5-035
C719 500V56
R739 1.5K
R745 1.2K
Q710 2SA933S,Q
D705 1SS133
Q712 2SD2400A,E
R743 2R220
C720 160V10
P703 3P
V901M
M702
To MAIN
VM
P702 3P

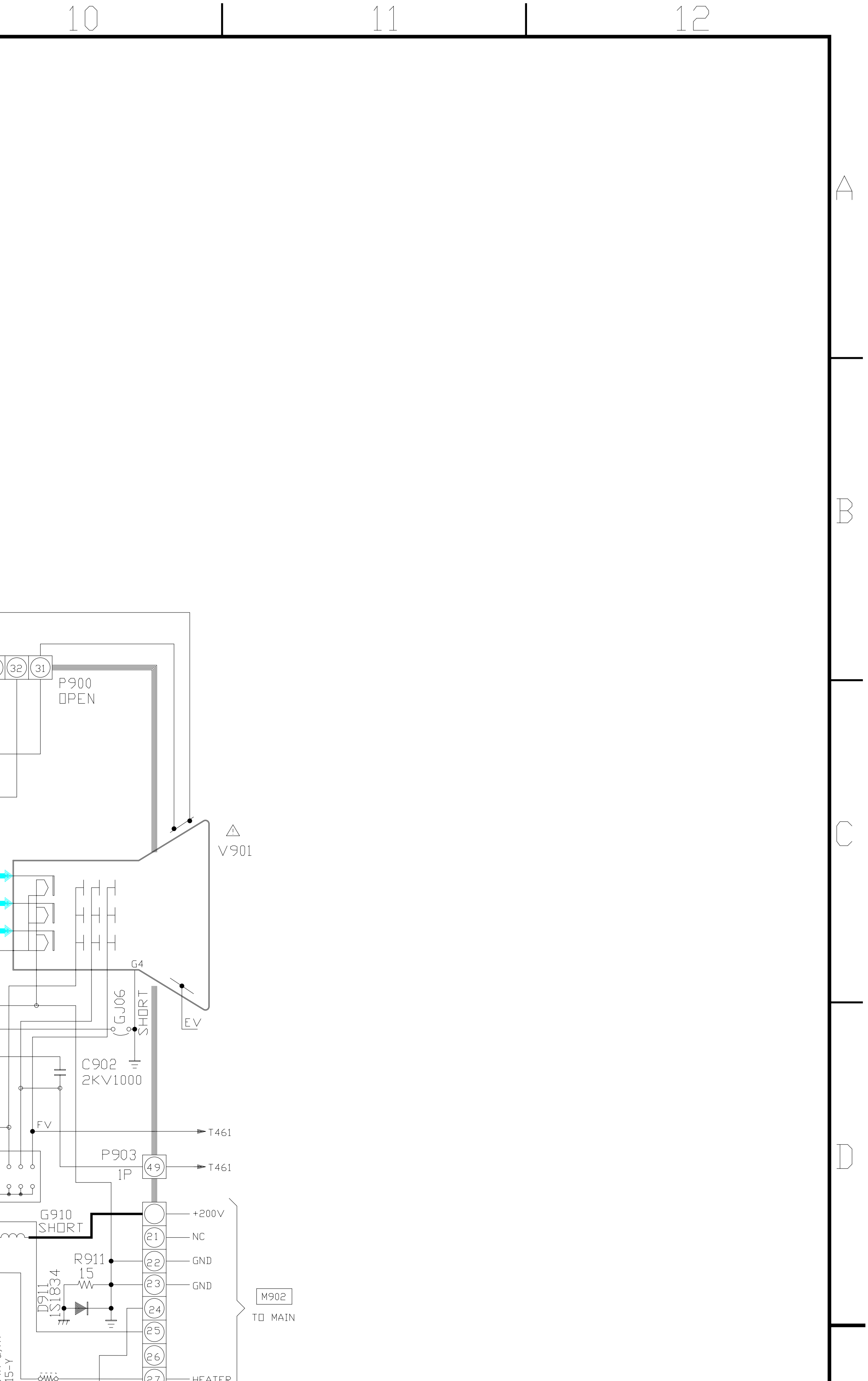
CRT-DRIVE
32AX60
36AX60

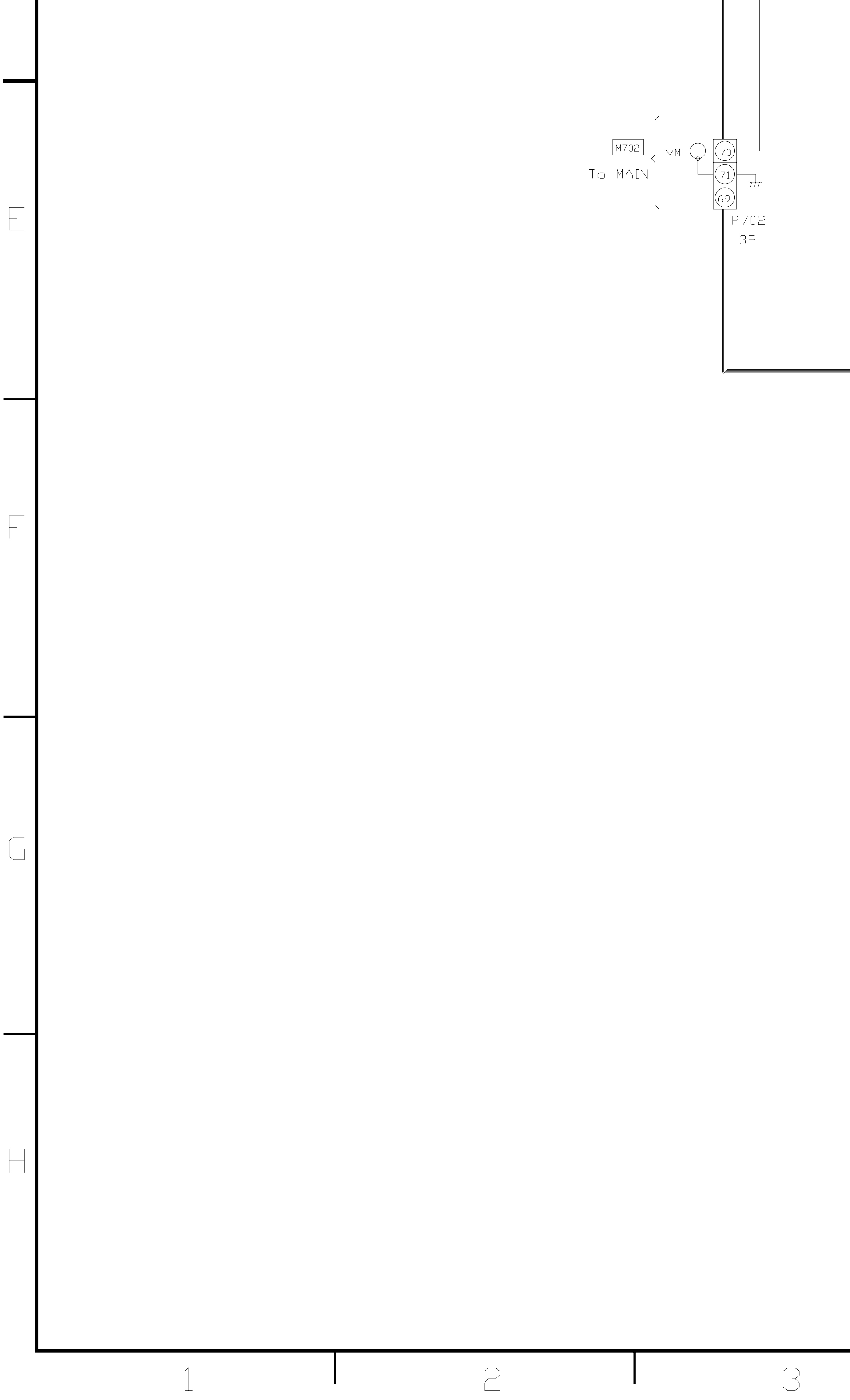

1
2
3
A
B
C
D
M701
To MAIN
125V
12V
39
42
43
125V
12V
P701
5P
G71
1/2R1

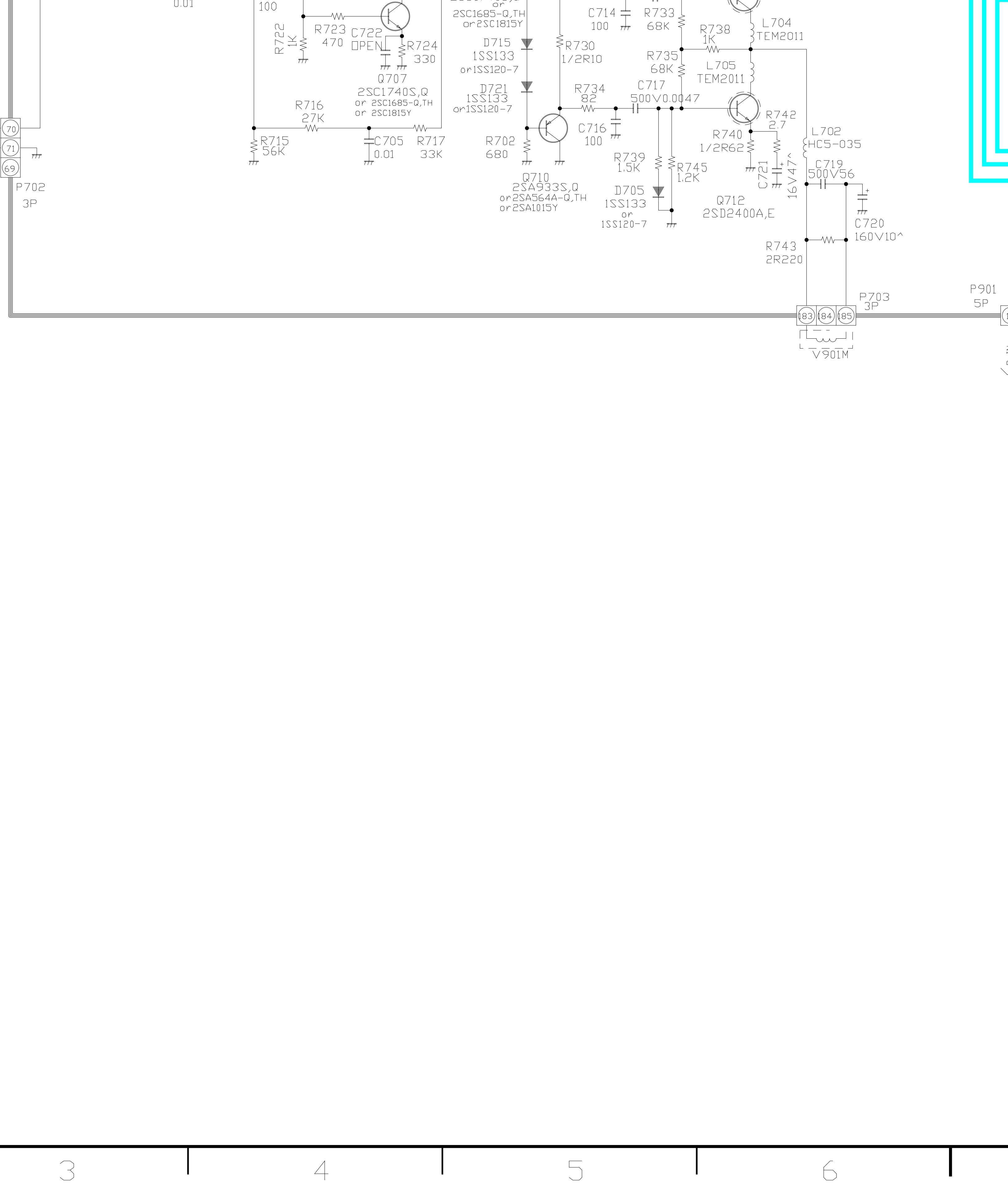

3
4
5
6
U901
TP-46R
TP-46G
TP-46B
125V
39
42
43
12V
P701
5P
G714
1/2R120
C707
16V100^
R725
1.8K
R713
39K
C712
OPEN
C713
160V10^
R731
1/2R330
R736
1/2R62
C718
16V47^
Q720
2SC1740S,Q
or
2SC1685-Q,TH
or
2SC1815Y
G719
3.9K
C726
1000
R720
3.9K
D720
1SS133
or 1SS120-7
R709
56K
Q719
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815Y
D704
1SS133
or
1SS120-7
R741
2.7
R737
1.5K
R744
1.2K
Q706
2SC1740S,Q
or
2SC1685-Q,TH
or
2SC1815Y
GJ07
OPEN
Q709
2SC1740S,Q
or
2SC1685-Q,TH
or 2SC1815Y
R732
82
C715
500V0.0047
Q711
2SB1569A,E
C704
0.01
R710
100
C714
100
R733
68K
R722
1K
R723
470
C722
OPEN
R724
330
L704
TEM2011
R738
1K
D715
1SS133
or 1SS120-7
R730
1/2R10
R735
68K
L705
TEM2011
Q707
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815Y
D721
1SS133
or 1SS120-7
R734
82
C717
500V0.0047
R716
R742

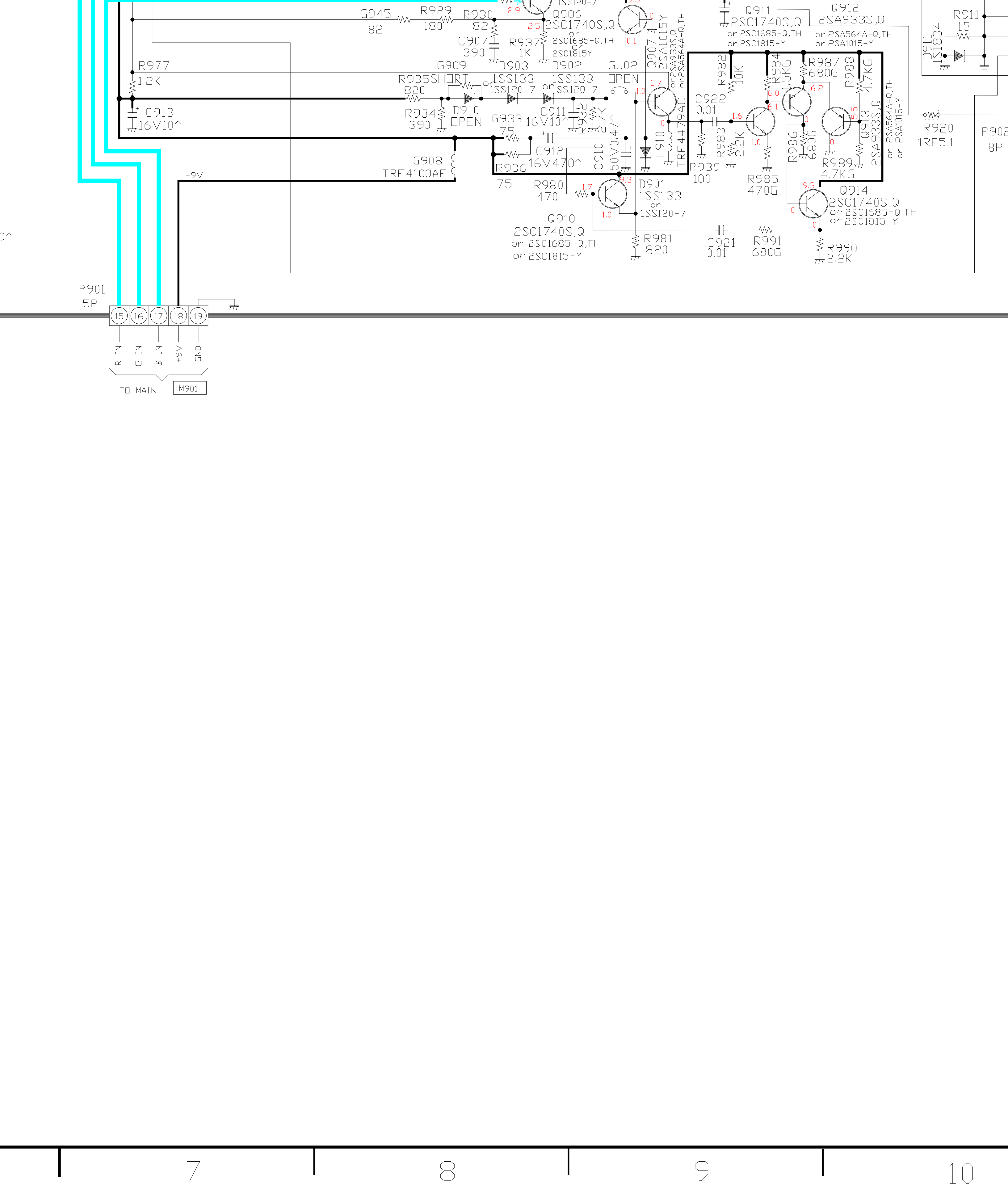
U901 CRT DRIVE


130V(p-p)[H]
120V(p-p)[H]
130(p-p)[H]
R904 10K
TP-47R
R905 100
D964 OPEN
165.9
Q901 2SC4544
8.9
8.4
R942 5.6K
R960 2R15K
L902 TRF4221AF
G905 SHORT
GJ01 SHORT
C920 500V100
P900 OPEN
33 32 31
D961 OPEN
R912 OPEN
R914 560
D904 1SS133 or 1SS120-7
Q902 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
2.2
1.9
TP-46R
Q962 OPEN
Q961 OPEN
G916 82
R915 180
R918 82
C904 390
R917 1K
R901 1/2R1K
R902 1/2R1K
R903 1/2R1K
G906 SHORT
R943 5.6K
R961 2R15K
L903 TRF4221AF
C914 0.01
D965 OPEN
TP-47G
167.2
Q903 2SC4544
8.9
R965 OPEN
R966 OPEN
D962 OPEN
R919 OPEN
8.4
D905 1SS133 or 1SS120-7
27.1
0.5
R963 OPEN
Q960 OPEN
2.0
TP-46G
R964 OPEN
R921 560
Q904 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
2.4
2.0
G946 82
R922 180
R924 82
C905 390
R925 1K
GJ06
C902 2KV1000
D960 OPEN
R967 OPEN
G907 SHORT
R944 5.6K
R962 2R15K
L904 TRF4221AF
FV
V901A
TP-47B
147
D966 OPEN
9.2
Q905 2SC4544
8.9
P903 1P
D963 OPEN
R926 OPEN
R928 560
D906 1SS133 or 1SS120-7
TP-46B
Q908 2SC2120Y
9.3
0
0.1
C909 250V22
G910 SHORT
G945 82
R929 180
R930 82
2.9
2.5
Q906 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815Y
C907 390
R937 1K
Q907 2SA1015Y or 2SA933S,Q or 2SA564A-Q,TH
Q911 2SC1740S,Q or 2SC1685-Q,TH or 2SC1815-Y
Q912 2SA933S,Q or 2SA564A-Q,TH or 2SA1015-Y
R911 15
D911 1S1834
R977 1.2K
G909
R935 SHORT 820
D903 1SS133 or 1SS120-7
D902 1SS133 or 1SS120-7
GJ02 OPEN
1.7
1.0
R982 10K
R984 1.5KG
R987 680G
R988 4.7KG
6.0
6.1
6.2
1.6
C922 0.01
C913
R934
D910
C911


10
11
12
A
B
C
D
32
31
P900
OPEN
V901
G4
GJ06
SHORT
EV
C902
2KV1000
FV
T461
P903
1P
49
T461
+200V
G910
SHORT
21
NC
R911
15
22
GND
23
GND
D911
1S1834
24
M902
TO MAIN
25
26
27
HEATER


M702
To MAIN
VM
70
71
69
P702
3P
E
F
G
H
1
2
3


0.01
100
R722
1K
R723
470
C722
OPEN
R724
330
Q707
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815Y
R716
27K
R715
56K
C705
0.01
R717
33K
2SC1685-Q,TH
or2SC1815Y
D715
1SS133
or1SS120-7
D721
1SS133
or1SS120-7
R730
1/2R10
R702
680
Q710
2SA933S,Q
or2SA564A-Q,TH
or2SA1015Y
R734
82
C716
100
C714
100
R733
68K
R735
68K
C717
500V0.0047
R739
1.5K
R745
1.2K
D705
1SS133
or
1SS120-7
R738
1K
L704
TEM2011
L705
TEM2011
R740
1/2R62
R742
2.7
C721
16V47^
Q712
2SD2400A,E
L702
HC5-035
C719
500V56
C720
160V10^
R743
2R220
70
71
69
P702
3P
183
184
185
P703
3P
V901M
P901
5P
3
4
5
6


G945
82
R929
180
R930
82
2.9
Q906
2SC1740S,Q
or
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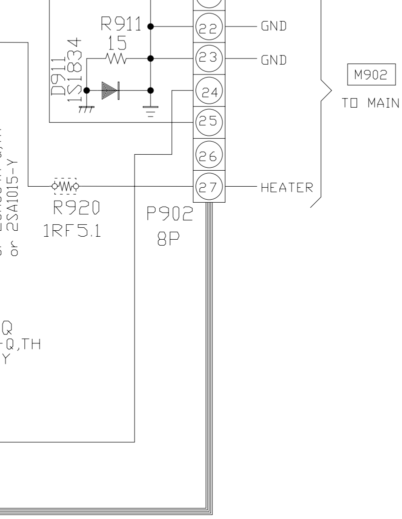
or
2SC1815Y
2.5
C907
390
R937
1K
1SS120-7
Q907
2SA1015Y
or 2SA933S,Q
or 2SA564A-Q,TH
0.1
Q911
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815-Y
Q912
2SA933S,Q
or 2SA564A-Q,TH
or 2SA1015-Y
R911
15
D911
1S1834
R977
1.2K
G909
D903
D902
GJ02
OPEN
R935SHORT
820
1SS133
or 1SS120-7
1SS133
or 1SS120-7
1.7
1.0
C913
16V10^
R934
390
D910
OPEN
G933
75
C911
16V10^
R932
2.7K
C910
50V0.47^
L910
TRF4479AC
C922
0.01
R982
10K
R984
1.5KG
R987
680G
R988
4.7KG
6.0
6.1
6.2
1.6
5.5
R983
2.2K
1.0
R986
680G
Q913
2SA933S,Q
or 2SA564A-Q,TH
or 2SA1015-Y
R920
1RF5.1
P902
8P
G908
TRF4100AF
C912
16V470^
R936
75
+9V
R939
100
R985
470G
R989
4.7KG
R980
470
9.3
D901
1SS133
or
1SS120-7
Q914
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815-Y
9.3
Q910
2SC1740S,Q
or 2SC1685-Q,TH
or 2SC1815-Y
R981
820
C921
0.01
R991
680G
R990
2.2K
P901
5P
15
16
17
18
19
R IN
G IN
B IN
+9V
GND
TO MAIN
M901
7
8
9
10


R911
15
D911
1S1834
22
23
24
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26
27
GND
GND
M902
TO MAIN
HEATER
R920
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P902
8P
2SA1015-Y
Q,TH

E

F

G

H

CRT-DRIVE
32AX60
36AX60

10 11 12